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CONTENTS

	Page
The Laboratory Diagnosis of Tuberculosis. Max Pinner, M. D.	503
The Duties of the Aurist at the Detroit Day School for the Deaf. Emil Amberg, M.D.	507
Hydronephrosis. Leon B. Cowen, M. D.	509
A Different Angle on Disposing of Tuberculosis Patients. E. S. Bullock, M. D.	512
History of Cardiology. John L. Chester, M.D.	519
Order of Birth as a Factor in Epilepsy. Wyona Green	525
Michigan Department of Health. Guy L. Kiefer, M. D.	528
EDITORIALS—	
Medical Service	532
Therapeutics	533
The A. M. A.	533
The Passing of the Teacher	534
Editorial Notes	534
News and Announcements	535
Deaths—Dr. Fleming Carrow	535
Medico-Social and Economic. J. H. Dempster, M. D.	536
Our Open Forum	538
COUNTY SOCIETY ACTIVITY—	
Official Program, 108th Annual Meeting, Michigan State Medical Society, Detroit, September 26-27-28th, 1928	539
Woman's Auxiliary	549
The Doctor's Library	551

ON THE LABORATORY DIAGNOSIS OF TUBERCULOSIS*

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The inception of laboratory methods for the diagnosis of tuberculosis is Koch's discovery of the tubercle bacillus. In the period of the first enthusiasm, the clinical diagnosis of pulmonary tuberculosis was deemed established with the demonstration of bacilli in the sputum, and the same diagnosis was discarded when acid fast rods could not be found. When the necessity and the clinical possibility of an early diagnosis became known through the work of Grancher, Turban, and Gerhard, the laboratory responded to the clinical urge by the elaboration of new methods and of innumerable modifications and "improvements". The biologic diagnosis by tuberculin and by uncounted tuberculin-like substances has had its days of unlimited application; they are gone; the limits of tuberculin diagnosis, narrow and definite as they are today, are, or should be, well known to every medical man. This subject will not be discussed here, because the biologic diagnosis is considered to be a clinical task, since in its performance the stethoscope is as important as is the syringe.

Before discussing somewhat in detail the various laboratory procedures available today, it may not be amiss to mention a few words about the proper approach to, and an intelligent use of laboratory methods. One thing should be clearly understood: the evaluation of a method, the establishment of its percentage error, is a statistical problem. Its application to the diagnosis in the individual patient is a matter of clinical judgment. The appraisal of a method must be done on large series of individuals, healthy, diseased with tuberculosis, and suffering from other diseases. The tuberculous group should include various types, localizations, and stages of the disease. The minimal patient is, for ob-

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vious reasons, a particularly important group, which is, unfortunately, all too frequently neglected in this type of work. By such carefully controlled work one will be able to determine that a given test is negative in a known percentage of minimal or far advanced cases, that, on the other hand it is positive in a certain percentage of non-tuberculous individuals. This establishes the percentage error of the test.

The clinical application of laboratory results is a problem of an entirely different nature. Let it be said on the outset that no laboratory test exists applicable to the diagnosis and prognosis of tuberculosis, which is 100 per cent correct. Consequently, a diagnostic puzzle cannot be definitely solved by a laboratory test, be its probable error 5 per cent or 50 per cent. It should never be forgotten, and it is forgotten so frequently, that the laboratory can and should only present evidence—and it is circumstantial evidence only, in many cases—and that sentence must be rendered by judge or jury—the clinician. The internist who has his diagnosis made in the laboratory will find much fault with his laboratory man.

It would be an unnecessary reiteration to emphasize the importance of careful co-operation between clinic and laboratory, but I wish to suggest that this be mutual. A laboratory which receives samples of material without careful and explicit clinical data, will be soon reduced to a mere technical workshop unproductive of stimulation and diagnostic suggestion, which the clinician is justified in expecting. In this sense, every clinical department has as good, or as bad a laboratory, as it deserves.

It is necessary to have well understood and definite standards for the evaluation of laboratory tests. They should be chosen with the viewpoint to aid the clinician in his problems of diagnosis and prognosis. It is obviously of little importance to have laboratory tests which are reliable only when applied to far advanced and clinically unproblematical cases. The two chief difficulties which the clinician encounters are: the early and definite diagnosis of minimal and incipient lesions, and correct prognostication at any stage of the disease. If the following discussion may, at times, seem too critical, it should be remembered that the value of tests is here appraised according to the standards mentioned; in other words, a worth while procedure is expected to furnish *more* information than the clinician can obtain by his own methods.

Specific serologic reactions may be divided into two large groups: those demonstrating specific antibodies and those demonstrating specific antigens. In the former class all serologic reactions known from other diseases have been employed. Agglutination of tubercle bacilli was advocated by Arloing in France and by his school. Their extensive work showed that serum of tuberculous patients will agglutinate tubercle bacilli in a specific manner; this occurrence was reported in 90 to 100 per cent of patients actively diseased, but non-tuberculous individuals gave the same test in 30 to 70 per cent of cases. This test, then, demonstrates tuberculous *infection* and does not differentiate it from tuberculous *disease*. Numerous modifications of the agglutination test were advocated. Fornet's so-called "defatted bacilli" caused quite recently a revival of this procedure and a volley of publications. But no material progress can be recorded. All the other serologic methods, such as precipitation, opsonin reaction, meiostagmin, and epiphanin reaction, the demonstration of specific defensive ferments—they all have had their advocates, they all have been weighed and were found wanting.

Of all antibody reactions, complement fixation has aroused most interest. The literature on this subject is enormous. Every variable in the rather complex mechanism of this reaction has received special attention and has been subject to innumerable modifications. The appalling number of antigens which have been propounded is ample witness for the lack of satisfaction derived from the results of such tests. Almost every worker in this field has suggested at least one new antigen. Suffice it to mention the names of the better known ones only: Miller, Petroff, Corper, Wilson, Woolley in this country, Calmette and Massol, Besredka, Negre and Boquet in France, Wassermann, Seiffert, Klopstock and Neuberg in Germany, Wang and Crocket, and Dreyer in England, and so on throughout the civilized world. A similar variety of technics is in existence. This work was productive of several very interesting facts in regard to the antigenic structure of the tubercle bacillus and to the biology of tuberculosis. The practical results can be summarized briefly. Tabulating more than 27,000 tests from the literature, the following figures were found (1). The test was positive in

Active Tuberculosis	69 per cent
Inactive Tuberculosis	63 per cent
Not Tuberculosis	15 per cent
Wassermann pos. sera	29 per cent

My own experience with a variety of antigens in more than 2,000 tests led to the conclusion that active and not active tuberculosis cannot be differentiated by the test. In active tuberculosis we obtained about 75 per cent positive tests, in minimal cases about 40 per cent and in cases without bacilli in the sputum only about 25 per cent. In patients without tuberculous disease, 14 per cent positive tests were obtained. It is evident from these figures that the cases most in need of diagnostic aid cannot derive material benefit from the test. We have discontinued its use. Before leaving the subject of antibody reactions it should be stated that the available evidence would argue for their serologic specificity. Their practical failure is due to the fact that serum antibodies in tuberculosis are inconstant, that they may be lacking in active disease—apparently a prognostically irrelevant occurrence—and that they may be present in latent and healed infections.

Only a few words are necessary about the demonstration of specific antigens. The best known procedure of this type is Wildbolz's auto-urinary test. A limited experience with about 60 patients convinced me that it is highly unreliable. The more recent literature on the subject is unfavorable.

During recent years a considerable amount of literature has accumulated concerning so-called serologic non-specific activity reactions. They are based on the essentially correct observation that infection, tissue destruction, and toxemia lead to a destabilization of the plasma and serum colloids. This physico-chemical change—incompletely understood as yet—is demonstrated either by reagents which precipitate proteins, or by the fact that the red cells settle much faster in such a destabilized plasma than in normal plasma. It is not claimed—or, at least, the claim is not maintained—that any of these tests is specific for tuberculosis. But they are supposed to indicate tissue waste and toxemia, i. e., activity in tuberculosis. The degree of destabilization parallels allegedly the amount of activity. Serial tests would, then, be prognostically most indicative. The red cell sedimentation test has been extensively applied to tuberculosis. The literature is replete with unusual promises as to the value of the test. Cutler (2) says: "The blood sedimentation test is a more reliable index of the presence or absence of activity than the temperature, pulse rate, gain in weight or physical signs", and from the fact that he found no definite relation between the results of the test and the extent of involvement, curved nails, clubbed fingers, duration of disease, duration of activity, bacillary content of sputum, expectoration and subjective condition, he concludes "that in estimating activity the blood sedimentation test is more trustworthy than any one of the symptoms and signs enumerated." According to printed blanks which he had put on the market the degree of activity can be safely established simply by performing the sedimentation test. We have used this test rather extensively in our laboratory. The details of this study are reported in co-operation with Miss Knowlton and Kelly (3). We used essentially two criteria to evaluate the clinical significance of the test; namely (1), the percentage of patients with definitely active tuberculosis who give a normal rate, and (2), the fluctuations of the test compared with the clinical course of the disease. We obtained normal rates in 14 to 33 per cent of all tests, more than 600 in all. Out of 40 sets of observations, the sedimentation test paralleled the clinical course according to theoretical expectations in 10 cases or 25 per cent, while incorrect results were obtained in 75 per cent of cases. This whole subject cannot be discussed here in detail. Suffice it to say that in our opinion the prognostic significance of the sedimentation test is very small, even if applied serially, that the magnitude of the sedimentation rate, although undoubtedly dependent on tissue destruction, does not parallel the latter. Definitely elevated values are found only in the presence of some pathologic processes, but normal values do not exclude the presence of an active tuberculous lesion. Similar statements would be correct for any and all of the other so-called activity tests which are known under the names of their authors: Matefy, Lange and Heuer, Frisch and Starlinger, Sachs and Klopstock, Vernes, Daranyi. The writer (4) applied the latter test to the serum of more than 500 patients and concluded that this test may have a limited field of application to prognostication, but that a reliable parallelism between test and clinical picture does not exist.

Blood-chemical findings in tuberculosis need but little comment. They should be

considered in the same light as in any other disease. It can be definitely stated that no alterations specific for tuberculosis are known. How much blood-chemical data will help in the intelligent understanding of a given patient does not depend on the laboratory results, but entirely on their clinical interpretation. That they may be significant for the detection of complications and inter-current diseases and important in deciding about surgical interference, is obvious.

Essentially the same is true of morphologic blood studies. Cell counts, and particularly differential counts have their legitimate place. The textbook lymphocytosis in tuberculosis is a myth in the general way in which it is usually stated. Acute exacerbations, miliary spread, rapid caseation—without the interference of mixed infections—may produce leukocytosis. A relative lymphocytosis constitutes then in the hand of the careful interpreter a prognostically valuable sign. Very low figures for lymphocytes indicate invariably a serious prognosis. The relative number of eosinophiles is probably prognostically of interest; but only when at least 500 white cells are counted, can any significance be attached to the findings. Tuberculosis always produces a secondary anemia, usually not very marked. But a pulmonary tuberculosis with 5,000,000 erythrocytes or more will usually be found to be pneumokoniosis.

Very interesting studies have been published quite recently on the ratio lymphocytes to monocytes (5), which may eventually prove to be of real value. The observations on humans are, however, still scarce, so that judgment must be reserved.

Arneth counts, carefully done and interpreted on the basis of a large experience, are of help in determining the resistance and the reactivity of the organism; they are laborious and hardly applicable to routine work.

Sputum examination is still the most important procedure. Here, probably more so than in many other laboratory tests, proper technic and extreme care make for success. Putting a platinum loop or applicator into a narrow-mouthed bottle containing the sputum, leaving it confidently to fate which particle of sputum will adhere to the instrument, opens the road to failure. Such playful practice still goes on under the name of sputum examination. Minute care in selecting the proper particle for examination, the cheesy granule, or the heavy purulent floccule, is paramount in importance. There are two more points—often neglected—which insure success: the smear must be made very thin and quite even, and the counterstain should be very light—in fact, much lighter than almost any textbook indicates. No sample of sputum should ever be discarded because it does not look "suspicious". Perfectly clear, mucoid or watery sputum may contain bacilli, and this type of sputum is more than likely to come from incipient lesions, in which the bacterioscopic diagnosis is of particular importance. Concentration methods—Petroff's sodium hydrate procedure should be recommended particularly—should be employed for negative samples. A large percentage of positive findings in concentrated specimens as compared to direct smears, indicates oftener carelessness in the preparation of direct smears than the excellence of the concentration method advocated. Cultural methods have proved their usefulness, but space does not permit to discuss them in detail. Animal inoculations are, and should be, the last resort. Anyone who finds many sputum specimens positive only on inoculation, should revise his microscopic examination.

And now to the efficiency of the bacteriologic diagnosis. Dr. Werner and I (6) have just completed a study on this subject. During one year, 115 patients came under our observation in whose sputum tubercle bacilli had not been demonstrated by our repeated routine examinations. Out of these 115 patients, 14 were found to have non-tuberculous pulmonary lesions, such as bronchiectasis, asthma, pneumokoniosis, etc., 33 had no pulmonary lesions whatsoever. This left 68 patients with the clinical diagnosis of pulmonary tuberculosis and with negative sputum. Using a variety of methods, as indicated above, tubercle bacilli were demonstrated in the sputa of 32 patients. To show the relative efficiency of the various procedures, it may be mentioned that the success was due to direct smears in 17 cases, concentrated specimens were positive in 6 additional instances, cultures from otherwise negative material were obtained 4 times, and in only 5 instances was inoculation of guinea pigs more successful than all the preceding methods. This reduced the group of patients with pulmonary tuberculosis and negative sputum to 36. The clinical diagnoses of these patients were as follows:

Apparently cured	3
Apparently arrested	20

Quiescent	8
Frankly active	5

During the period of this work, 507 patients with active pulmonary tuberculosis were under our observation. The outstanding result is, then, that in more than 99 per cent of patients with active tuberculosis, tubercle bacilli were demonstrated in the sputum. The reliability of the bacteriologic diagnosis is accordingly of a very high degree. Sufficiently so, to claim that a consistently negative result, provided the technic is beyond doubt, assumes a definite clinical importance. It may be said, not as a hard and fast rule, but as a working rule which can be successfully applied, that in a patient with a definite parenchymatous lesion, with sputum amounting to about 10 c.c. or more in 24 hours, and with symptoms of activity, a non-tuberculous lesion must be strongly suspected, if persistent and competent search for tubercle bacilli is unsuccessful. With the evidence presented here, the omission of sputum examinations in the presence of a pulmonary lesion must be considered as a grave neglect.

Contrary to the generally accepted belief, negative findings assume a definite clinical significance. They indicate, according to our studies, that the lesion in question is not of tuberculous etiology; or if it is, the absence of tubercle bacilli suggests strongly that the lesion is healed or healing. This explains why, according to numerous statistics, so-called "closed" cases have a much better prognosis than "open" ones. It is evident that these terms —indicating only a surface phenomenon —should be replaced by terms descriptive of the pathologic state of the lesions. Our observations have shown that it is not the extent, but only the pathologic-anatomic character of the foci which decides the presence or absence of bacilli in the sputum.

The example of sputum examinations will well serve to emphasize again the importance of intelligent interpretation of laboratory results, the fallacy of accepting the evidence uncritically. We have seen a case of very far advanced pneumoconiosis, in whom a small fibriotic tuberculous cavity played a clinically unimportant role; but this cavity shed bacilli; uncritical acceptance of this evidence would lead to diagnose erroneously the entire pulmonary pathology as tuberculosis. We have observed a young woman whose sputum contained virulent tubercle bacilli, but she had no pulmonary lesion. Her tonsils, after removal, were found to contain active tuberculous foci.

Many more or less important laboratory procedures could not be discussed. The examination of gastric contents, feces, urine, exudates, spinal fluid was not mentioned. They all may furnish significant evidence. The same as in the use of clinical data, the all important thing in regard to laboratory data is a proper balance, is the avoidance of undue emphasis on *one* finding alone. As long as one does not lose sight of the fact that the object of diagnosis is not a lesion, or a disease, but the patient, one will not be overwhelmed by *one* sign, *one* symptom, *one* laboratory test.

In modern medicine the tendency is observed to charge the laboratory with too much diagnostic responsibility. This is probably due to the fact that laboratory data as such are unequivocal and but little subject to personal error. What is true of the data, however, is not true of their interpretation. This fact, it seems, is too easily overlooked.

The Alpha and Omega of the laboratory diagnosis is the demonstration of tubercle bacilli, in sputum, in spinal fluid, in gastric content and feces, in exudates, in scrapings and in tissues; but blood-chemical findings, hematologic studies, and certain serologic tests will be helpful; if properly weighed, they will assist in understanding and evaluating the interplay between host and bacilli. If these auxiliary tests are accepted as definite diagnostic and prognostic indexes, they will lead to failure. Their usefulness is in direct proportion with the diagnostic skill of the clinician who uses them.

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THE DUTIES OF THE AURIST AT THE DETROIT DAY SCHOOL FOR THE DEAF*

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The aurist of a school for the deal finds himself in a comparatively new field. The routine examination of the pupil must take into consideration anything which per-

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tains to the ear and the general physical and mental makeup. A trained psychologist is in attendance at the school. If there is any reason whatsoever to suspect mental deficiency, the pupil is examined from this viewpoint. It would be an injustice to the child, and especially to the other children and the teachers, to harbor a mentally deficient child in the school. Once in awhile a child of low mentality must be referred to institutional care. These cases are referred to the psychological clinic for placement. In case of physical ailments, the child is referred to the family physician, and if, as is so frequently the case, the family is in reduced circumstances, it is sent to a clinic or treated in the school clinic. As an example, it may be cited that a child presented itself which, on the first look, appeared to be pale and sick. Immediate general care was recommended. In three weeks, the child had passed away in consequence of nephritis, as the nurse reported.

NATURE OF EXAMINATIONS

The examination proper, begins, as a routine measure, with examination of the teeth. It is surprising how many children suffer from neglected teeth. If necessary, the school dentist, who also takes care of the children of other schools, is called in consultation. The examination of the teeth has another advantage. A child will not object to examination of the teeth, whereas it would object if it would be told "let me look at your tonsils". When the teeth are examined, it is easy to extend the examination to the tonsils. Examination for adenoid vegetations are not made in the school, for obvious reasons. If the tonsils necessitate removal, and the slightest suspicion exists that adenoids are present, the child is referred to the family physician, who is asked in turn, to recommend a specialist. Numerous instances can be cited in which the ear conditions have been markedly improved after adenectomy and tonsillectomy in pupils who have been sent from other schools. These could remain in their schools instead of being referred to the school for the deaf. Of course, the removal of adenoids is the most important factor in improving the hearing, while the removal of tonsils may improve the general condition in some instances. I examine children frequently whose tonsils and adenoids have been removed, and yet they present a condition which points to the existence of adenoids. It should be remembered that an adenectomy, even if properly performed, may not exclude the reappearance of the disturbing growth. Therefore, a re-examination for adenoids is often recommended. The ears should receive proper attention after adenectomy. Judicious inflation of the ear will do a great deal, but overtreatment must be avoided. Then the ear itself is examined. Malformations, the conditions of the outer ear canals, the presence of cerumen or foreign bodies, the condition of the drum membrane, of the middle ear and the sound percepting apparatus are noted. Suppurative conditions of the middle ear require special attention. Children with suppurating ears are referred to their family physician, unless they are under the care of a specialist. Operation is recommended if necessary. It must be stated, however, that the advice is heeded only in a few instances, and this only after repeated and urgent requests. It is true that during school life an intracranial complication of ear suppurations rarely develops, but the attention of the parents is frequently and emphatically called to the fact that the child is in a dangerous condition. For some reason or other the advice is not followed, as a rule. Upon inquiry the statement is encountered frequently that a physician has advised to leave the ear alone because the child would outgrow the condition. The hearing tests are made with the audiometer, the human voice, which is the most important examination, and the tuning forks, if necessary. The vestibular tests are made in the turning chair. The tuning forks may reveal tone islands. As Bezold has shown, about 15 per cent of the deaf have some residual hearing. If necessary, a Wassermann test is recommended .

CONSERVATION OF HEARING

The pupils from other schools go through the same routine examination. If we consider that there are at least 10,000 children in Detroit who should be tested thoroughly, one can readily see that our work is in its infancy. An ingenious apparatus facilitates the mass examination of pupils, of 40 at the time. This examination should extend to all school children, about 152,780. This work has now been started in Detroit under the supervision of Miss Gertrude van Adestine, principal of the Detroit Day School for the Deaf. It has been estimated by investigations sponsored by the American Federation of Organizations of the Hard of Hearing that 14.4 per cent of the school children are

hard of hearing (hearing distance less than 2/5 of the average). It is assumed that 3,000,000 school children in the United States are hard of hearing. There are 17,000 school children in the Schools for the Deaf in the United States. It is absolutely necessary that the 10,000 children in Detroit should not only be examined, but they should remain under constant supervision. This requires a staff of aurists, through whose hands the pupils should be filtered, so to speak. It is next to impossible to examine more than 8 to 10 pupils in an hour. Ten thousand children would take at least 1,000 hours. The aurist of the School for the Deaf has 2 hours a week at his disposal (although he extends the time frequently). Under favorable conditions, it would mean that he can examine, in a school year, about seven to eight hundred pupils. (I think we reached, exceptionally, the number of 1,000 last year). If one aurist can take care of 800 pupils, 10,000 pupils require at least 12 aurists. Here is a wonderful field for volunteers in a work which is of such great importance to the handicapped child and to the community. Let me recommend to the society the earnest consideration of this point.

THE EFFECT OF A HANDICAP

When we consider the mental attitude of a child, we must not forget that a deaf or a hard of hearing child has a psychology influenced by its handicap. It is, so to speak, surrounded by a wall and isolated from the surrounding world. It is the duty of the physician to recognize the defect at an early age, and the task of the teacher to penetrate this wall, to break it down and to establish a contact between the world and the child. How this can be accomplished, can be observed in the kindergarten of the Detroit Day School for the Deaf. Even before the child enters the school, at an age of 3 years, the parents should try to accomplish some of this work. Lip-reading and development of speech are the means to this end in the school. May I call the attention of the members of the society to this field of medical endeavor, in which so much can be done to make people useful members of society? It is possible to make them share the benefits of a full life and to turn depression and misery into joy and happiness.

CONCLUSIONS

1. The ears of all the children in the school must be examined repeatedly. Records must be kept concerning the conditions of the ear. Also the mental efficiency of the child must be considered.
2. Pupils from other schools, who are referred to the school for examination must be tested.
3. Medical measures which are likely to improve conditions of the ear must be recommended.
4. The general physical condition of the child must be taken into consideration.
5. The child, suspected to be hard of hearing, must be kept under observation.

HYDRONEPHROSIS

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Hydronephrosis, the term employed to describe a kidney in which the pelvis and calices are dilated and the parenchyma reduced in size, like many words in scientific nomenclature, is a misnomer. The inaccuracy of the word "hydronephrosis" as a descriptive term is evident from its literal translation which implies a watery degeneration of the kidney. A specimen of advanced hydronephrosis reduced to a thin shell of parenchyma and a greatly dilated pelvis may give this impression, when the process of degeneration through which the kidney has passed before this condition is reached, is not recognized.

A study of these stages of degeneration, the results of interference with renal drainage, has made hydronephrosis with its varied etiology, and its pathology based on human specimens and ingenious animal experimentation, a condition amenable in a large degree to modern methods of treatment. Hydronephrosis is of interest not only to the urologist, but to the general practitioner who sees the patient when his symptoms are vague and misleading and who, by careful evaluation of symptoms and early diagnosis of the disease in its early stages, is able to do the patient immeasurable service. It is in the early stages that hydronephrosis may often be cured by removing the cause.

The onset may be insidious with vague somatic and visceral symptoms not referred to the urological tract. Because of superficial examination of the patient and hastily drawn conclusions, frequent mistakes of diagnosis are made. Sterling, Richole, Martin and Chynoweth report that at least 30 per cent of cases of hydronephrosis have had previous abdominal operations with no relief. The symptoms

of hydronephrosis are often confused with those of appendicitis, salpingitis, cholecystitis, uterine malposition, abdominal adhesions and sacro-iliac disease.

PATHOLOGY

No clear conception of the pathology of hydronephrosis is possible without keeping in mind the salient points of renal anatomy with special reference to its vascular supply. Briefly, we must picture the renal cortex and medulla, the pyramids with their apices projecting into the renal sinus, the minor calices enclosing the papillae of the pyramids, the minor calices joining the major calices, which in turn unite to form the renal pelvis. There are three major calices which break up into about eight minor calices. Each minor calyx encloses two to three papillae. The pelvis of the kidney is partly intra-renal and partly extra-renal, an anatomical point of importance, since it is related to a phase of pelvic dilatation.

The renal artery arises directly from the aorta extending to the renal hilus, where it breaks up into four large branches, these passing into the renal sinus anterior to the pelvis and one passing posterior to the pelvis. On entering the kidney substance these arteries divide into two arteries for each side of each pyramid, about thirty arteries for fifteen pyramids. These are the inter-lobar arteries, for each pyramid represents a fetal lobe. The inter-lobar arteries divide at the base of each pyramid into the arcuate arteries from which rise the interlobular arteries. The capillary branches of these, especially the set which supplies the renal pyramids, terminate in veins around the collecting tubules and are the vessels chiefly affected in hydronephrosis. The pressure effects on these capillaries causes the primary atrophy of the kidney.

Hinman and Morrison have shown with celluloid corrosion methods that the arterial changes play a definite part in hydronephrosis. They used rabbit kidneys, dividing the ureter between ligatures. The changes resulting from the complete ureteral obstruction were first: pelvic distention; second, compression of the renal parenchyma; third, progressive displacement outward by distending force within. The recession of the papillae due to compression of the medulla precedes displacement. The arteri-recti of the medulla are foreshortened and later as the pelvic distention increases, the interlobular arteries are similarly changed and the terminations atrophy. The blood flow through the parenchyma is diminished, the tissue tone lowered and complete parenchymal atrophy results due to the ischemia. The main trunks and branches and a few glomeruli near them are the last to survive.

Kairis, working with dogs, showed that with complete obstruction of the ureter, no case of rapid primary atrophy of the kidney was observed. Every case showed a dilatation of the pelvis and hydronephrosis.

In man there is also no primary atrophy of the kidney with complete obstruction of the ureter. Experiment shows that urinary back pressure is the primary factor in hydronephrosis, the blood supply, the second and most important factor in producing dilatation and atrophy.

The size of a hydronephrotic kidney varies according to the duration of the obstruction and the location of the obstruction. The cortex in advanced cases is reduced to a mere shell. The microscopic changes are those of diffuse glomerular-tubular atrophy with replacement of the glomeruli and tubules with connecting tissues.

ETIOLOGY

The etiology of hydronephrosis is always obstruction to the outflow of urine from the renal pelvis. This obstruction may be infravesical, that is, below the bladder, as in prostatic hypertrophy or urethral stricture, or supravesical, above the bladder, as in ureteral calculus.

The kidney is affected by any obstruction, the functional and anatomic changes, depending on the distance of the obstruction from the kidney. In infravesical obstruction, the bladder by hypertrophy of its muscular elements protects the kidney. When the bladder fails to empty and becomes dilated, the outflow of urine from the renal pelvis is slowed by increased back pressure and urinary excretion is impaired. Functional impairment may be present before hydro-ureter or hydronephrosis may be diagnosed in this type of obstruction.

In supra vesical obstruction, the anatomic changes described occur first before functional changes can be recognized. The pressure effects are acute, there being no protection of importance from the bladder, when the removal of a calculus is necessary. Compensatory function of the unobstructed kidney obscures the functional impairment of the obstructed one.

A kidney with a large dilated pelvis may

have a normal function and return to normal when obstruction is relieved.

SIGNS AND SYMPTOMS

Pain is the most constant symptom of hydronephrosis, although it is frequently absent. When due to renal calculus, the pain is colicky and recurrent. When due to stricture of the ureter, it is dull and aching, located in the lumbar region, or referred to the umbilical region or to areas enervated by the lower thoracic and upper lumbar fibers. This type of pain may be mistaken for arthritis of the spine and is often found in cases of kinking of the ureter due to a movable kidney.

Tumor is not a definite sign and may not be felt in fat people. Pain is usually complained of before a mass becomes palpable, but a mass may be present without pain.

DIAGNOSIS

Every patient complaining of chronic lumbar or abdominal pain should have a complete physical examination. With a history of colic, transient polyuria, backache or hematuria, attention should be given to every factor related to this condition. The patient should be carefully examined for evidence of focal infection or diseases of the thoracic and abdominal organs. Careful palpation should be done for tumor or to determine the presence of a movable kidney. Rectal examination to note pathology in the prostate or seminal vesicles must not be omitted. Examination for stricture with a flexible bulbous bougie is necessary. To exclude the possibility of intravesical prostatic median lobe enlargement, a sound must be passed and the prostate examined per rectum with this in situ.

Finally, examination of any patient in whom hydronephrosis is suspected is incomplete without cystoscopy, catheterization of the ureters, renal function determination, and pyelography. On passing the cystoscope, we note any obstruction at the vesical neck. The presence of a calculus, neoplasm, diverticulum, or trebeculations in the bladder is determined. Ureteral orifices are located, carefully examined and catheterized. Obstruction at the ureteral meatus or at any portion of the ureter is noted. After the catheters have been passed to the renal pelvis, specimens of urine are collected and a functional determination with phthalein is done.

Increased intra pelvic pressure denoted by the rapidity and continuity of the excretion of urine immediately after the catheterization is often diagnostic. Roentgengrams are taken, first in the horizontal position before the injection of sodium iodide, to determine the presence of calculus; the second is taken after sodium bromide has been injected into each kidney pelvis; the third is taken in the vertical position with the ureteral catheters removed, first allowing three minutes to elapse before the film is taken. This last film will give us a ureterogram and any evidence of interference with drainage from the pelvis due to stricture or kinking of the ureter. The normal kidney pelvis has a capacity of three to five ccs. and should empty within three or four minutes.

The preceding measures usually suffice to make a diagnosis not only of hydronephrosis, but also of the causative factor, whatever it may be.

TREATMENT

The treatment of hydronephrosis may be divided into conservative and radical treatment. The conservative treatment, which is applicable in most cases where the functional impairment is slight or moderate and the anatomic changes not so extensive, consists in the removal of the causative obstruction. In infravesical obstruction, this consists in the dilatation of the urethral stricture or the removal of a hypertrophied prostate. In supravesical obstruction, it would consist in the removal of calculi either in the bladder or ureter or dilatation of strictures and kinks. Many ingenious instruments now enable us to remove calculi from the bladder and ureter without operative procedure. Occasional dilatation of the ureter with catheters or bougies may obviate the necessity of a nephrectomy in certain cases of hydronephrosis due to movable kidney, by arresting the progressive degeneration of such a kidney. The application of a well-fitting belt or even the operation of nephropexy which has almost fallen into disuse, may be used to fix a ptosed kidney.

Radical treatment is indicated where the damage to the kidney and its serious systemic effects endanger the life of a patient. In such cases, a very careful study of the patient is necessary before nephrectomy is done. The condition of the companion kidney often determines whether or not such an operation is advisable.

From the foregoing it may be deduced that the subject of hydronephrosis in all its phases is a complex one. Much medical acumen and technical skill must be employed to arrive at a favorable termina-

tion in every case. One point in diagnosis and treatment, however, must be emphasized. Determine first if there is interference with drainage from the renal pelvis, attempt to find the cause for this interference and, keeping in mind that such interference, if maintained even for a short period of time, is dangerous to the function and organic integrity of the kidney, attempt to remove this cause.

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A DIFFERENT ANGLE ON DISPOSING OF TUBERCULOUS PATIENTS

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It has often occurred to me that before my work is finished it might be well to record my contrasting observations of tuberculosis as it is and can be handled in a large city in the east, or, as it may be said, in a so-called unfavorable climatic environment, with my thirty years experience in the west, in a so-called favorable climatic environment. Since I returned to my old home in Detroit, some two years ago, I have been watching alternately, just how tuberculous people are managed and disposed of and with what results. Of course, it would be fine to have thirty years here as well as thirty in the west, but that is obviously impossible at my time of life, so it behooves me to do the best that can be done with what I have before it is too late to record anything. Enough has come under my observation to make what may be said of real value to those who are truly interested in disposing of the tuberculous with their best interests constantly in mind.

About a year ago Dr. James Alexander Miller of New York made the remark before the clinical section of the National Tuberculosis Association that "it was indeed unfortunate that all men interested in tuberculosis could not have Dr. Bullock's experience and practice both east and west." If those in Colorado and New Mexico, for instance, could exchange places with those on the Atlantic side of the country, and vice-versa, it would, I think, cure them of illusions such as I carried with me for many years. It almost never occurs, however, that one can have the contrasting experiences which have come to me as a result of apparently not being able to live in a high altitude. So, the purpose of this paper is to dispel unscientific ideas about the use and abuse of climatic treatment in tuberculosis.

It may be helpful to go back and recall the professional opinion of climate in the treatment of tuberculosis at the end of the last century. This is at once illuminated by two opposed opinions offered me as a tuberculosis subject in 1898; one from the late Dr. Simon Baruch of New York, and the other from Dr. Edward Janeway of the same city. The former, who was much influenced by the German teaching, then only just being discussed in this country, said, "stay right here in New York and you will get well just the same," and the latter told me, "go as soon as you can to my friend Dr. Edwin S. Solly of Colorado Springs and do just as he says for as long as he wishes you to do it." I took Dr. Janeway's advice and have never regretted it, though now I realize that Dr. Baruch might have been correct in his opinion too. However, having seen very few really recover from tuberculosis while in the service of Dr. E. L. Shurly of Detroit during my student and internship days, it meant a lot to me to go to a place where they actually looked for cure, in early cases, especially, and I have always felt that going to such a place was a big psychologic factor in my own recovery, and being young, my own cure, for such it actually turned out to be, made a tremendous impression upon me, and for years I thought that Dr. Janeway was right and Dr. Baruch wrong. As time went on though, doubts assailed me as more and more the claims of home treatment came to the front until now, after thirty years it almost appears as though the advocates of climatic treatment have been placed permanently upon the defensive.

As the anti-climate school became more and more vociferous and finally claimed the center of the stage my doubts as to the integrity of my position became more and more troublesome, and always I sought a definite answer to the question—just what is there in climate for the tuberculous? It seemed that I must find the reply if I remained happy and contented in my work

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of persuading doctors to send me their patients out to New Mexico and of caring for them after they got there. Some people can be seemingly contented in doing something in which their minds and hearts are not engaged, but I never was that way, and as long as I remained out west I sought the solution of my problem. I rather think I have found it, but frankly the answer might have continued to elude me if circumstances beyond my control had not forced me to come east to practice, and thus driven into my head as nothing else could have done, the point-of-view of tuberculosis workers here. Many of us are obtuse when it comes to comprehending things which lie outside our own experience. As "Trader Horn" would say "homo stultus" and I must confess I was no shining exception.

At this point I wish to interject that I do not claim to have discovered all the truth. Only in mathematics can we feel really sure and even then along may come an Einstein who upsets our calculations completely, but I think I have a safe working formula which I should be glad to have any doctor apply to me personally if once more I had to face a period of invalidism from tuberculosis.

Thirty years ago the late Dr. E. L. Shurly of this city started sending me patients with tuberculosis—a practice he continued until his death, to be succeeded in the same way by his nephew, Dr. B. R. Shurly. Back in 1914, or about that time, the last named and myself made an exhaustive study of the first one hundred cases the Shurlys had referred to me at Silver City. This study was reported to the National Association and showed that the results achieved in all classes were superior to those obtained under a like regime in the east, and proved, as well, that it was safe to return home after "cure" in a sheltered climate. It was this study which gave me the first ray of light that my efforts for climatic treatment might be well founded after all.

After my return from France in 1919, I decided to study and classify every case I had ever had in the effort to determine just what had been accomplished in the previous twenty years' work. That study which included all angles I could think of was published in the American Review of Tuberculosis, Vol. VI, No. 6, August, 1922, and there is no question of the honesty and good intent which underlaid it. I was much more interested in proving things to myself than to anyone else. But even after the study was completed, though it helped, I was not wholly satisfied that it meant what it seemed to mean. It was my statistical apotheosis, but nevertheless in any statistical study of tuberculosis there are so many factors and the personal equasion may enter so persistently if unintentionally, that one has a right, nay it becomes a duty, to scrutinize most carefully any claims arising as a result of such a study.

In the first place no satisfactory classification of tuberculosis has ever been devised. Turban 1, 2 and 3 means something just a little different to each and everyone, and it takes into account only the size of the lesion. So likewise do different people interpret differently Incipient A, B and C; moderately advanced A, B & C, and far advanced A, B & C. The first is too simple and the second too complicated. My own idea is that positive cases should be considered only as productive or exudative, afebrile or febrile; for as everyone knows, these are the really important factors in the light of end results, and, as they sometimes shade one into the other, they too serve to confuse the issue.

A genuine classification of tuberculosis will be dependent upon an accurate measurement of individual resistance (what determines exudative and what a productive case) plus knowledge of the size of the original lesion, plus possible subsequent infections, if such occur, plus knowledge of the virulence of the parent and later infections, also the size of the dose as well as present factors, such as febrility, constitutional impairment, size of the lesion, etc. Most of the things upon which a real classification must be built are not only now beyond our knowledge but always will be so. With all this in mind one cannot expect to come to absolute and incontrovertible conclusions as a result of studying the statistics of results as reported by any institution.

Nevertheless, I should like to recall just what my study seemed to imply. My own cases were classed according to Turban and the scheme advised by the National Association—I did the same for all cases treated at Ford Bayard and the Trudeau Sanatorium, up to that time in all about thirteen thousand cases. Certainly the number is impressive enough, and if it were not for the uncertain factors referred to in previous paragraphs would be really convincing, and in any event should carry considerable weight. The study showed, *that in the Turban I cases 64 per cent

were arrested at the New Mexico Cottage Sanatorium; at Trudeau 45 percent; in the Turban II cases 42 per cent were arrested at the New Mexico Cottage Sanatorium and at Trudeau 9.9 per cent; while in Turban III cases at the first named institution 7 per cent were arrested, and at the latter none.

At first glance the result of my study was wonderfully convincing and satisfying to me and seemed to justify my life work and devotion to climate, but the more I thought it over the more doubtful I became for reasons already explained, and it appeared that if not wholly convincing myself, still less could I hope to persuade others. So, the idea was concieved of doing without the classification altogether and to use again the words then employed, "consider only those who are discharged better or worse." "Surely anyone can tell whether a consumptive is better or worse." With this idea of being just as fair and dispassionate as possible I again classified all thirteen thousand cases according to this scheme and here will quote only the results at Fort Bayard and Trudeau, leaving my own cases entirely out. Fort Bayard for the first nineteen years of its existence, beginning in 1899, was conducted by the Medical Department of the U. S. Army. Of course, during those eighteen years when something over five thousand cases were cared for there, many different men worked on the records. At all times it was a public institution, but at no time can it be presumed that anyone had anything to gain by making the results appear better or worse than they really were. As a matter of fact, beginning with the first Com. Officer Major D. M. Appel, to the last, our late regretted Colonel George H. Bushnell, who was certainly not prejudiced one way or the other, no one at Fort Bayard was especially interested in climatic treatment. Everything said of Fort Bayard applies equally to the Trudeau Sanatorium, even the number of cases was about the same. What is the result? First let me say that good results included arrested, quiescent, improved, and bad results unimproved, progressive and dead. In the Turban I class at Fort Bayard the good results were 87.8 per cent; in Turban II, 71.83 per cent; Turban III, 33.45 per cent; at Trudeau, in Turban I cases the good results were 80.7 per cent; Turban II, 63.7 per cent; Turban III, 20.5 per cent. In Turban I cases the difference in favor of Fort Bayard is 7.1 per cent; in Turban II, 8.1 per cent; in Turban III, cases 12.9 per cent. As may be seen there is a difference, not great, in favor of Fort Bayard in all classes and increasing as the cases get worse. In other words the more extensive the lesion, the more necessary climate becomes, but in any event the final result is a so-called good climate over that in one of less pleasant characteristics is certainly not so superior as ever to be purchased at the expense of the patient's inclination or personal interest outside of the disease.

For one who desires to go west and who can afford to do so the seven to twelve per cent increase in chances is certainly worth consideration. In a disease so serious every favorable influence should surround the patient, and climate takes its place as just one factor among many and can be sacrificed before any of the others, as being less important than proper management, contentment or good food and bodily comfort. I know the climate enthusiasts of which I formerly was honestly one, are going to rise in indignation when they read this, but the truth is the truth and must in the end prevail regardless of vested or personal interests.

In all fairness, however, it must be admitted that it is infinitely more pleasant and easy to take the "cure" in a bright sunny, dry climate than under such dull, skys as Michigan affords for instance, especially during the winter months. The efforts of men here to get fresh air and comfort combined for their patients during the winter are really pathetic and a constant source of annoyance to them and to their patients. We should never forget that under the worst conditions of environment, climatic and otherwise, tuberculosis can and does heal, and as well that often under the very best and most favorable conditions it fails to do so. Using the term environment to comprehend all that enters into an individual case it must be considered decisive in the great majority, but let me accent once more, no one factor can be considered all important or exclusive and least of all climate which we must place at the bottom of the list rather than at the top where it was thirty years ago.

All good things are helpful when obtainable, but one should not be purchased at the expense of another—we must understand, and it can hardly be repeated too often, that it's much better to have good food in Detroit than poor food in Colorado, and better to have wise medical supervision at home than to go away to be mismanaged and exploited, and the Lord

knows I have seen plenty of examples of both in my time.

The study of my cases brought out an interesting fact in this connection and that is that twenty-eight per cent of all the patients I ever had out west for one reason or another, should never have left home. Many of these were too far advanced to expect betterment anywhere. Of this type of case however, the hopeless consumptive, it is most interesting to observe that without them my institution at least could not have remained open; for these cases, requiring more care and a longer time, made a difference between a modicum of success and complete failure—that is financially speaking. I naturally suppose that if such is true of my institution it also holds good as well for the others.

Practically all of my patients were sent to me by physicians, and a small percentage had never been given a chance to try climatic treatment until useless, but, as a rule, the sort of doctor who referred patients to me was only too glad to give a patient a possible enhanced opportunity for recovery. Some of the cases too, composing the twenty-eight per cent, should have remained at home because they were not financially equipped for treatment away from home. As time passed there was a slowly but steadily increasing tendency for the type of case to get worse and more hopeless in prognosis. This, of course, is largely the result of saving climatic change to be tried only after home treatment has failed. Sending people away just to die is both inhuman and unscientific, and not always is the doctor to blame, for at the last moment sometimes they elect to go entirely on their own initiative.

If climate treatment is to be used at all it should be fairly employed, and the indications for its use should be clearly defined, in the minds of medical men particularly, with whom the decision mostly rests, especially those who honestly desire to forward the interest of the patient in all ways. I have no interest in addressing any other class, and probably the others will not read this essay anyway, and it will mean nothing to them if they do.

There is a negative way in which it can be proved without the aid of statistics that climate is of value. Thirty years ago, when as an officer in our Army, I was on duty at Fort Bayard we received most of our cases first from Cuba and later from the Philippines. I never heard a doctor who had served in the tropics maintain other than that tuberculosis was a hopeless disease under conditions of great heat and moisture, such as is found in the Philippines particularly. It has been the opinion of our Army Medical Department personnel during all the years since the Spanish War that if a tuberculous subject is to be saved he must be gotten out of the tropics. The experience of the British Army in India has been the same. For twenty-five years Dr. W. E. Deeks of the United Fruit Company, sent me patients from Central America and it is the unvarying opinion of the medical men in the employ of that company without any exceptions whatever, that a sure way to kill a person with pulmonary tuberculosis is to try and treat such in the tropics. Thus, if it is known that there are places which are unfavorable there must be places that are favorable in varying degrees depending upon the presence of dryness and coolness, the opposite of the known unfavorable influences, heat and moisture, found in the tropics. One can, on general principles, safely maintain that New Orleans is better than Panama, and New York better than New Orleans, and Saranac Lake better than New York, and Colorado Springs better than Saranac Lake. As one leaves the tropics and comes north it must be deduced that the increment of benefit from change of climate will become less and less—as the natural environment of white races is more nearly approached, until finally only from seven to twelve per cent of enhanced benefit can be expected from going, let me say, from Saranac Lake to Silver City, for instance. It can then be deduced that it is more important for a resident of Florida, or our southern states in general, to make such changes of climate than for the inhabitants of states further north. I believe the above statements to be wholly true and defensible and should receive consideration from thoughtful students of this matter.

At this point it is apropos to point out that the exploitation of such places as Phoenix, Tuscon, El Paso and San Antonio as resorts for the tuberculous is just short of criminal. They have nothing to recommend them but delightful winters—their summers are deadly and no one knows this better than I who for years received patients shot to pieces from a summer in such places after having done well the previous winter in those places. There is hardly a tuberculosis worker who does not appreciate that patients do better in the winter than during the summer, so why, in Heavens name I ask, submit them to

the fearful heat—even though it is dry, characteristic of the summer climate of the places named? The best health resorts in the United States, Europe and Asia are all noted for coolness, which is pre-eminently characteristic of Saranac Lake, Colorado Springs, Prescott, Las Vegas, Santa Fe, Silver City, and to a slightly less extent of Albuquerque. They can talk all they like —these Commercial Clubs and doctors at those hot places about their cool nights—which in my opinion are poor compensation for being roasted all day. I wish all could, for a few hours, have my experience at El Paso during the summer of 1917, when I stood in my O. D. breeches, naked from waist up, examining recruits at El Paso during July and August. In my opinion every time a Commercial Club persuades a "lunger" to go to one of the hot places named it means just one thing, the exploitation of a most unfortunate class.

With no scientific basis whatever large sums of money have been spent in building institutions at these hot places, at El Paso especially, where there are several. Now there is a new and elaborate one at Tuscon, and I was astonished to read the long list of prominent medical men who have loaned their names for its advertisement, and in my humble opinion the exploitation of the tuberculous.

The fact that all consumptives held during the summer in such hot places are not utterly ruined speaks for two things, the tremendous resistance of the white race to unfavorable environment and the fact that the heat is not combined with moisture and is thus less injurious and also at night they get a certain amount of relief. I wonder if it were commonly understood that the residents of Tuscon and Phoenix particularly, go away during the heated season whenever they can afford to get away, and live in their cellars when they cannot, if so many distinguished men would have loaned their names for propaganda in their favor.

Altitude, about which we have heard so much, is only important as a modifier of temperature, and to a less extent the increasing thinness of the atmosphere as one ascends permits more actinic light to get through; but its influences upon temperature, the higher the cooler, is really the important one. For instance, the City of Mexico, a thousand miles farther south, has a wonderful summer climate, but the altitude is over seven thousand feet. Altitude, that is, up to seven or eight thousand feet, has no effect upon pulse, respiration, or blood pressure in resting acclimated persons. As the general condition improves the blood pressure does increase but this is not an effect of altitude. The tendency toward pulmonary hemorrhage is not increased by altitude. The number of red cells is increased directly in proportion to the altitude. This is a compensatory phenomenon to make up for the lessened amount of oxygen in the atmosphere.

Of course during exercise quite a different picture is presented, for with increased altitude under exercise the lungs and heart must work more as the altitude increases. Therefore the use of exercise is a matter requiring more good judgment and caution than at sea level.

It is much more pleasant to take the "cure" in a place that is bright and sunny all the time—not too cold in winter nor too warm in summer—than in less favorably situated spots. If I had my own experience to repeat I would do as I did thirty years ago, and go to the right place and the right doctor out west. Getting well in Sanranac Lake with the temperature below zero in the winter months may be efficient, but for me at least it would be a real labor and most unpleasant, when one might as well go where day after day and all winter long one can watch the sun rise in a blaze of glory and feel its genial rays all day until it sinks in gold and purple splendor in the western mountains.

Now let us consider the new point of view gained since I have had the opportunity to study the problem of disposing of tuberculous people in an unfavorable climate, as it effects the average doctor as well as the man more especially devoting himself to the practice of so-called phthisiotherapy. I cannot do better, I think, than to give the principles as they have been applied in this office, for the past fifty years—first under Dr. E. L. Shurly and later under Dr. B. R. Shurly.

In fact, in one particular, the practice has not varied during all those years. It has always been recognized that there are better places than Michigan for the tuberculous, and no impediment has ever been placed in the way of a patient who desires to go away. The passing of the years, however, has witnessed a change in one respect; namely, formerly they were urged to go, and latterly no pressure is brought to bear to make them go. It is interesting to know how this has come about. First, it has been recognized that going away is not as essential as formerly it was thought to be, and second a queer psychologic

change has come over the people, the result of many factors the influence of which, though potent, is not always clear and differentiated.

There was a time when people would go to any reasonable length to send a stricken relative west, even mortgaging their homes to do it. That time is history. The poor of former years have moved to the place once occupied by the middle class—the thrifty ones who saved for a rainy day. Now, the family income is often almost wholly employed in paying for a house purchased on contract and as well an automobile, a radio, insurance, furniture, an electric washing machine, etc., bought on the installment buying plan, which system, though it has made the producer of manufactured goods exceedingly prosperous, has, in large cities at least, nearly driven the general practitioner to desperation and produced in the people a frame of mind opposed to saving for the exigencies of life. So, when the emergency arises, the trouble is promptly thrown upon the State. Whether some of our sociologic practices will establish a viscious circle, tending more and more to impair the initiative and independence of our people is a problem that I for one do not feel able to solve, but I am fearful of the ultimate result to say the least. Anyway, it's perfectly clear that when tuberculosis occurs in a family the first thought is often the State Sanatorium or some other charitable agency—with mothers' pension, and all the things which appear so lovely on the surface but are in fact eating the very heart out of independence and character. Also the continuous extension of police power as exercised by Boards of Health, the first thought being "get the patient into our sanatorium" still further impairs the physician's ability to dispose of a case in a manner which appeals to him as in the patient's best interest, and what has been said of Boards of Health applies equally to the University Hospitals, which in their desire for clinical teaching material quite lose sight of the fact that there are still a goodly number of physicians throughout the state trying to make a living by the practice of medicine.

Even when people should be able to afford to go the labor of persuasion is often too great and unprofitable, for in the end they will do as they please anyway, or take some friend's advice and go somewhere where they should not go. Our profession has indeed lost some of its authority with the people. Once a doctor could talk as Dr. Janeway talked to me and would be obeyed, but that time is also history. Now they will shop around and among the varying opinions received take a friend's advice or as a rule permit the tax-payer to foot the bill in the end.

During thirty years the Shurlys sent me hundreds of cases for which they received nothing but my gratitude and that of an occasional patient who recovered, but mostly they received grief, in that their patient or some "kind" medical friend would state or imply that the reason for sending the patient to me at Silver City laid in the supposed financial relation between us, when as a matter of fact in thirty years I never had any financial dealings with either of the Shurlys until I left the west and went to work for one of them. So that doing ardent missionary work on behalf of the consumptive only to have one's motives misinterpreted is a thing of the past where our office is concerned. Naturally, if the patient exhibits a receptive frame of mind such will get the benefit of fifty years' experience in sending patients about the world for their health's sake.

How many people under modern conditions can be sent west anyway? That question is easily answered, for me at least, for I have kept careful records since coming here, and just five per cent will admit that it is financially possible for them to go away for twelve months which we consider the minimum time they should at least be prepared for. So, if only five out of a hundred can be sent away the question of sending them is mostly academic; for out of every five financially able to go there will be one or two who cannot go on account of family or some other reason.

It is calculated that there are about one million active consumptives in the United States and five per cent of the number would be fifty thousand, which would much more than fill all the western sanitoria and health resorts that truly deserve to have such invalids sent to them. I judge that number is really many more tuberculous people than there are in the west at any one time—that is active cases—so it is probably safe to say that only two out of each hundred can or will go. So there is little or no use trying to sell climate, to use a modern term, for the benefit of such a small proportion. We will take any amount of pains if the patient appears at all receptive, and will send them away according to our long experience and the following principles.

In general it should be said that every

detail affecting the case should be taken into consideration, and about the last thing is the question of family economics. One hundred and fifty dollars a month for twelve months is the minimum sum necessary. During the first twelve months, a time, as a rule, long enough to either bring about arrest or establish the status, the patient must be absolutely free from financial worry—any conflicting state of mind will endanger the result and is not to be tolerated. It is also essential that the ones left behind should be at least relatively free from financial anxiety; for if not, the patient, such being human nature, will get the repercussion to his or her disadvantage. I rather think that we are almost alone in carrying protection of the taxpayer and the maintenance of family independence into our practice. It, however, seems to us important that the family as an independent economic unit be preserved as far as possible, and the most helpful thing along this line is the immediate induction of pulmonary collapse. When artificial pneumothorax can be efficiently applied it so far transcends all other therapeutic agencies as to make the others insignificant. This is not the same as saying that the old and tried should be discarded, but their relative inefficiency is fully demonstrated by a successful collapse case with no special attention to any other therapeutic measure. In order to have a family maintain their independence we often take but a week or two to get artificial pneumothorax well started and then let the father or mother, as the case may be, go right on with the work they have been doing. Of course, we take into consideration the kind of work, but most factory jobs are pretty easy these days. In this manner many cases are carried from start to finish—a year or two—without hardly knowing that they ever had tuberculosis. From this it follows that we believe in the use of artificial pneumothorax at the earliest possible moment—as soon as a positive sputum is demonstrated and the case is entirely or relatively unilateral. It not only saves the people from being sent away for climate treatment but as well saves sanatorium facilities for those who really require such treatment.

If there are very small children in the family it is theoretically desirable to separate them from a tuberculous parent, and this influences us in sending the patient—either west or to an institution to a certain extent depending on how ill the patient is and how much intelligence there is to depend upon in measures instituted to prevent infection, and thus in the presence of little children our efforts to save the taxpayer and maintain family independence must be subservient to the protection of the children. Those who maintain that the segregation of the tuberculous is a large factor in diminishing the tuberculosis morbidity will take exception to our practice, but believing as we do, that increasing racial immunity and full bellies and better living conditions are largely responsible for the lowered and lowering morbidity we have no difficulty in reconciling theory and practice.

Also, we take into consideration, as far as may be, in sending patients away, temperament and adaptability to sanatorium life. Not always can the patient's ability to adapt themselves successfully to sanatorium life be correctly apprehended. However, for years I kept careful account of these factors in the light of end results and know that temperament is a very big matter indeed in its influence upon results. Therefore a patient should want to go and state that they are willing to undergo a rigid discipline for at least a year as a preliminary to further discussion of just where they will be sent if sent at all.

A comparison of the results achieved in incipient tuberculosis of the lungs in terms of arrest at Trudeau, Fort Bayard and the New Mexico Cottage Sanatorium under my management, shows them to be so nearly alike that there is no special advantage in sending this type of case away. Early tuberculosis under proper management and full co-operation gets well in about 80 per cent of all cases anywhere except in the tropics.

As the case becomes more advanced and is not amenable to collapse therapy help of a suitable climate becomes more insistent—stopping short, of course, of manifestly hopeless cases. Exudative cases with marked febrility should not be sent away until the temperature is controlled—they die just the same in the west as in the east, and it's cheaper and more comfortable to die at home.

Successful collapse cases when the lesion is unilateral do not require the help of a favorable climate, as the one prime essential has been met—rest of the affected part, and so we do not send this type away, but prefer to keep them under our own management. In the small proportion in which thorocoplasty and phrenectomy are applied, being much more difficult types, climatic treatment is indicated, as such

need all the help they can get. In those in which collapse therapy is only relatively successful and in which there is a certain amount of involvement on the other side we consider climatic treatment indicated.

In conclusion let me state that the tradition maintained in this office for half a century of giving those who can and should have it a better chance, in the west (selected places) than is afforded here will be applied in the future as it has been in the past.

HISTORY OF CARDIOLOGY

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History is the foundation of all teaching. For it is only by an historical appraisal that the real philosophy of anything can be appreciated or understood. And this is true of the sciences and especially so of medicine and its various specialties. Strongly impressed by some early literary masterpiece or Homeric poem, are we not prone to attribute to the ancients such superlative powers and qualities that present day generations appear pigmy in comparison? Recall the roster of your childhood heroes, your mental record of stirring events and heroic performances since time began, and you will probably at once recall the up-speaking, brave Horatius and the undying story of the Pass at Thermoplyae.

ALL THINGS IN CONDITION OF FLUX

"There is nothing new under the sun!" In preparing this short history of cardiology, I have had several lessons brought very forcibly home, chief of which are that nothing in medical science is static, that ideas, conceptions, customs and technic continually change, each age stepping on the shoulders of the ages which have gone before. I have searched the scriptures of our profession, from the days of the fabled Aesculapius, down through the Galenical times, Harvey's monumental writings, on to present day literature, and I find that the only thing that has not changed, but remained the same through the centuries, is the physical structure of the human body, including the myocardium itself.

There is much that is new in medicine, much, very much, still to be known. Regarding the heart, we are only now on the threshold of real knowledge. During the last quarter of a century more progress has been made towards arriving at a true conception of the human heart's functions than had been made in the preceding centuries. In the light of this new conception, further building on it, and aided by the latest in mechanical technic at our ready disposal, who can doubt but that progress in this specialty will be continuous.

HIPPOCRATES AND THE HEART

The history of cardiology may be divided into three periods: ancient and primitive, or pre-scientific, the period of scientific investigation, the period of scientific application. Looking back from 1928, all cardiac knowledge must have been more or less primitive even up unto the latter part of the third period. From the days when the gods were blamed for all diseases and had to be propitiated accordingly, down through the various ages, as the heart was in turn considered the seat of the soul and containing no blood, to comparatively recent times when medical men reluctantly discarded the accepted premise that a heart murmur of whatever kind was a positive danger signal, cardiac knowledge slowly progressed. To critically review medical history would be to acquiesce in Rudyard Kipling's stanza:

> Wonderful little, when all is said,
> Wonderful little, our fathers knew,
> Half of their remedies cured you dead,
> Most of their teaching was quite untrue.

To the fifth century B. C., little, if anything, from a medical point of view, was known about the heart and circulation. In these legendary times the Hellenic people attained a great degree of excellence in philosophy, poetry, sculpture and architecture, culminating in the advent of Hippocrates, the "Father of Medicine," the first of the ancients to really practice medicine. A rank revolutionist, he attributed disease to a visitation from the gods as did his predecessors, including Aesculapius, son of Apollo, chief god of healing in the Greek Pantheon, and father of the equally fabled twin daughters, Hygieia and Panacea. Hippocrates is thought to have been the first to listen for chest sounds.

THE VIEW OF PLATO AND ARISTOTLE

Then came Plato and Aristotle, the former philosophically stating that the heart was the seat of the higher emotions, while the later named the aorta, announced the heart as the seat of the soul, and without conceiving any idea of the circulatory system, believed it to be the source of the blood, to him the nutritive fluid of the

body. Praxagoras, is chiefly known as being the first to distinguish between the veins and the arteries, the latter in his opinion containing no blood. Herophilus counted the pulse and made an elaborate analysis of its rate and rhythm, while his contemporary, Erasistratus, described the auricles, valves and chordae tendinae of the heart, at the same time denying its blood content. These two, the first of the anatomists, were of the famous Alexandrian period and school, and were the last known "greats" before Galen.

GALEN CONTRIBUTES

Galen (131-201 A. D.), the founder of experimental physiology, was a disciple of Hippocrates, and the greatest of the Greeks after the "Father's" time. Of a roving disposition, he assimilated ideas from many countries, including Rome, where he at one time practised. A voluminous writer, a far-from-painstaking investigator, and a super-dogmatic teacher, yet he left an impress on medical science that was to last for many centuries. His discoveries and hide-bound theories with reference to the heart and circulation may be summarized as follows: He discovered that the arteries contained blood instead of air; he postulated the arteries as arising from the heart and the veins from the liver; diastole as the important active movement of the heart; the intraventricular septum as perforated, allowing communication of blood between the two chambers; that blood moves in both arteries and veins, though not in a continuous circulation. Galen somehow recognized the importance of the muscular element in the heart and held that the impulse for its contraction must originate within the organ. He was also the first to mention aneurysm of the aorta. His discoveries and theories regarding diverse other parts of the anatomy and on physiology and disease itself were equally as radical, and such was his standing as oracle-authority that even up to the sixteenth century, and in some cases long afterwards, most disputations on medical subjects were readily settled by quoting the never-to-be-disputed Galen. Galen was undisputed authority in medicine.

THE DARK AGES

With Galen's death in 201 A. D., ended the primitive or pre-scientific period of medicine proper. The transition to a scientific or pseudo-scientific regime was by no means rapid, for it must be remembered that the following centuries were of the Dark Ages, when new discoveries and ideas found slow acceptance. The Byzantine period, the Mohammedan and Jewish periods followed, when knowledge was largely transmitted from mouth to ear. Approaching the fifteenth and sixteenth centuries, great universities and schools of medicine were being founded as men's minds turned towards more rational explanations of biological phenomena. More important, still, the printing press made its appearance as a means of disseminating knowledge, with the advent of which knowledge of the various sciences ceased to be the privilege of the favored few, but gradually became available to the increasing masses craving learning.

Aegidius Corboliensis in the twelfth century made an exhaustive study of the pulse (one of his manuscripts still survives in the famed Bodleian library at Oxford) and his methods of investigation closely approximate the best practices of today. Mondino de'Luzzi, sometimes known as Mundinus, in the thirteenth century, although laboring under the spell of Galen, yet ventured to doubt some of the great master's views, especially as to the intraventricular septum, and his description of heart valves anatomically, falls little short of our current conception regarding them. Then came that genius Leonardo da Vinci of the Italian Renaissance, whose artistic hand made such detailed drawings of the heart as to give him a place in the annals of medical science. His writings, too, on the valves and cardiac cycle, cannot be ignored by any heart student delving into the remote history of this specialty.

Sylvius and John Winter, early in the sixteenth century, still of the Galenical school, and unable, or at least unwilling to stray far from the teachings of Galen, stumbled vaguely on certain phases of the muscular functions of the heart to give grounds for believing that they had started a new school of cardiac thought and conception, which was to be further advanced by their illustrious pupil and eventual superior—Andreas Vesalius. This Flemish teacher of Padua dared both Galen's teachings and the Inquisition, a dual antagonism of no mean proportions. An anatomist by choice, and the greatest physician intervening between Galen and Harvey, Vesalius demonstrated the impossibility of porous communication between the ventricles, and in many other ways discredited much of Galen's heretofore ac-

cepted doctrines. His magnificent "De Fabrica Humani Corporis", a work received at the time with contumely and considered even sacriligious, nevertheless forms a milepost on the then almost trackless medical desert, and marks an epoch in breaking with the past, as it ushered in a new era in medical history. Gabriele Falloppio, who described the Fallopian tubes, was one of Vesalius' most famous and most loyal pupils.

INVESTIGATION BY SERVETUS

Michael Servetus, in the sixteenth century, discovered that the blood in the pulmonary circulation passes into the heart after having been mixed with air in the lungs, while his contemporary, Realdus Columbus, demonstrated the blood content of the pulmonary veins, even though he did not discard Galen's ebb and flow conception of the circulation. Brissot and Fabricius were other notable pathfinders of these times, as was Andrea Cesalpino, the first named being known as a reformer in the practice of venessection as a therapeutic aid in an embarrassed circulation, while the last named, in pure theory and without accompanying experiment, thought that the heart, in systole, sends blood into the aorta and pulmonary artery, and in diastole receives it back from the vena cava and pulmonary vein. And this theory was soon to be demonstrated in convincing fashion by the greatest medical mind since Galen's time.

Fabricius described in detail the valves of the veins, and showed them to be turned towards the heart. Fabricius' place in medical history, however, does not rest solely on what he did in the realm of cardiac discovery. He was a teacher of great influence as well. Fabricius was William Harvey's teacher at Padua from 1599 to 1603.

HARVEY'S DE MOTU CORDIS

Harvey belonged to the seventeenth century, the age of Shakespeare, Milton, Newton, Bacon, Halley, Raleigh, Sidney, Sir Christopher Wren—the age of the Spanish Armada—the golden Elizabethan age. And well worthy is this giant of medical science to stand compeer with the greatest literary, poetic, philosophical and scientific minds of that most glorious period of all English history. Harvey broke away entirely from the Galenical theories of anatomy and dealt with visible, practical facts, instead of vague speculations. His great contribution to medical science was, of course, his discovery that the heart acts as a muscular force pump in propelling the blood along in continuous circular motion and that the actual quantity and velocity of the blood, as computed by him, make it physically impossible for it to do otherwise than return to the heart by the venous route. This discovery was in truth momentous. It rendered obsolete the teachings and theories of blood circulation since time began. It was in fact the foundation of modern physiology. Later, Harvey proved the impermeability of the intraventricular septum, also the fact that the blood passes through the lungs. Having no microscope, he failed to demonstrate the capillary circulation, as was done by Malphigi a little later, of whom it has been said—"He made a histological certainty of what Harvey made a logical necessity."

With Harvey began the real period of scientific application, and at his demise in 1657 progress in the science of cardiology was well begun. According to present day standards the evolvement of this new regime may appear slow. Yet, one must consider the times, the technical knowledge and mechanical equipment at the command of the then investigators, and with Kipling again I think you will agree when he adds this postscript to the stanza already quoted:

> "Yet when sickness was sore in the land,
> When neither plant nor herb assuaged,
> They took their lives in their lancet hand,
> None too learned, yet nobly bold,
> Into the fight went our fathers of old."

Harvey was bold, not with the boldness of the venturous, self-opinionated and self-appointed medical oracle, but with the assurance that his discoveries defied the minutest scientific tests. His followers seem to have absorbed some of that quiet, confident zest for further discovery that was so notably his, and as new fields of knowledge were charted they, too, were not slow to assert their claims.

BORELLI STUDIES NERVE MECHANISM

Borelli, closely following, applying the precepts of his mathematical teacher, Galileo, to what he had learned from Harvey, attempted the calculation of the contraction power per unit volume of the chambers of the heart, and even went so far as to suggest the neurogenic origin of the heart beat. Stensen, the Dane, followed with his statement that muscular contraction was independent of arteries, veins and nerves, while the Cornishman, John Mayow, added yet other important chap-

ters to cardiac knowledge with his experiments on respiration. He was the first to dissipate the idea that fermentative explosion had anything to do with the ejection of the blood content of the ventricles, asserting that this physical phenomena was the result of the contraction of the ventricle and that alone.

One of the founders of the Royal Society of London, and a president of the Royal College of Physicians, Francis Glisson, (1597-1677) first introduced the term "irritability" into the vocabulary of physiology. He also made investigation into the muscular contraction of the heart. The Papal physician, Lancisi, in certain of his writings, noted hypertrophy and dilatation of the heart as causes of sudden death. He was the first to describe valvular vegetations and cardiac syphilis, and attempted a classification of cardiac diseases. In the light of the modern polygraph, it is important to note here that he also described in some detail the cervical veins.

Giovanni Battista Morgagni of Forli, afterwards the incumbent of Vesalius' chair at Padua, made a still further important contribution to heart science. He was the first of all medical writers to attach importance to physical signs in the diagnosis of chest conditions. The foremost pathologist of his time, his descriptions of valvular lesions are classic, and it is believed he was the first to recognize heart block. It is appropriate that he should have been trained at Padua, as Vesalius and Harvey were.

About this time we have the work of Richard Lower, whose descriptions of heart structure exceeded all previous studies in accuracy; Stephen Hales, whose experiments in horses advanced the accurate measurement of blood pressure; the physiologist, Albrecht von Haller, who, in addition to elaborating on Glisson's theory of "irritability" demonstrated experimentally the myogenic theory of the heart beat. In the early part of the eighteenth century, Senac established himself as a cardiologist and he wrote voluminously on the heart. Besides attempting to enumerate the then known diseases of the heart, he made the somewhat modern observation that signs and symptoms observed in the living are not always verified in post-mortem examination.

Auenbrugger of Vienna lived during the latter part of the eighteenth century; his name rests principally on his discoveries in percussion. Following him was that most lovable English clinician, William Withering, the pioneer in the use of digitalis, whose name can no more be disassociated from a history of cardiology than can Harvey's or that of Sir James Mackenzie. Withering's experiments in digitalis dosage led him to the declaration that to produce the desired results the drug should be given to the point of producing nausea—i. e.—in full physiological amount. In the old Edgbaston church near Birmingham, this famous therapeutist was laid to rest in 1799, and to this day his grave can be seen with the foxglove worthily adorning his monument.

THE NAPOLEONIC PERIOD

The roster of French medicine of the Napoleonic era lists such names as Corvisart, Laennec, Dupuytren, Cuvier, and the surgeon, Larrey. Jean Nicolas Corvisart was Napoleon's favorite physician, and the "Little Corporal" had the rare faculty of recognizing, employing and rewarding outstanding ability when he saw it. Corvisart called himself a heart specialist—the first of his specialty. His works on diseases of the heart were possibly ahead of his times, and his statement that "upon the muscular efficiency of the heart depends life itself," has a resounding ring of modernism. By improving upon and clarifying Auenbrugger's theory of percussion, Corvisart is best known to medical science. He made of percussion a fascinating art. Occupying for many years the chair of Clinical Medicine in Paris, his fame as a teacher was such that students from all countries flocked to his classes, making of the French capital the medical mecca of the world, as it was then the military and political center. Laennec was a pupil of Corvisart and his claims to inclusion among cardiac students are twofold; he invented the stethoscope, and wrote one of the most important treatises on diseases of the thoracic organs yet known. He was indeed the first to put the diagnostic sounds of cardiac and pulmonary diseases upon a reliable basis, and also the first to describe and differentiate bronchiestasis.

With these two illustrious investigators, France, however, did not cease to contribute to cardiology. Bouillaud made valuable studies on valvular murmurs, mentioned gallop rhythm, and coined the expression "endocarditis." Poiseuille invented the mercury manometer for measuring blood pressure, and fixed the basis for determining the viscosity of the blood,

while Pierre Louis is understood to have been one of the first to use a watch for timing the pulse. Later, Marey perfected the sphymograph, the forerunner of the polygraph.

Meanwhile a school of advanced thought in cardiac matters was claiming attention in Ireland, where in Dublin, William Stokes and Dominic John Corrigan were blazing a trail all their own. Stokes made an exhaustive study of valvular lesions and "fatty degeneration." His name is, of course, associated with the type of heart block known as Stokes-Adams disease. Corrigan was particularly interested in the circulation, describing the collapsing pulse of aortic insufficiency which bears his name.

In England, Richard Bright's work on nephritis brought him within the domain of cardiology, while Hodgson, besides making a contribution on aneurysm, wrote on vascular diseases. James Hope, too, contributed by his investigations on auscultation which helped to place it on a sounder basis. Hope studied valvular murmurs with great care, bringing out the meaning of regurgitant murmurs.

Wilhelm His, the discoverer of the bundle of fibres forming part of the conduction system of the heart, was another of the eminent cardiologists of the nineteenth century, as were Weber and Ludwig, with their discoveries on the vagus.

The scene shifts to America, where Da Costa made a special study of "irritability". This brings us nearer to the present and to other noted men in this specialty. Electricity now serves the heart physician in his work. Matteuci first suggested measuring electric currents of the heart, Kolliker and Muller further experimented in this direction, and finally William Einthoven of Leyden invented the string galvanometer, which in its perfected state has been of incalculable assistance in analyzing and even diagnosing various heart conditions, especially the arrhythmias.

THE WORK OF MACKENZIE

Such has been the history of cardiology —a groping after knowledge through the centuries. For the most part progress has been slow, with here and there flashes of brilliancy in an otherwise rather dark firmament—Galen, Vesalius, Harvey, the major stars. The nineteenth century saw the dawn of real progress, the twentieth, the culmination of the summum of all that had been acquired before. The last quarter century can boast of achievements greater in number and value than had been attained in all previous history. Our current conception of the heart in health and disease is largely the result of labor performed in this field since the beginning of the present century. To one worker in particular can be attributed much of the credit, that very able scientist and wise philosopher, Sir James Mackenzie, the "Father of Modern Cardiology."

Mackenzie's achievements are so well known to the profession that little need be said of them beyond recapitulation—he was the pioneer in the graphic study of cardiac disease, and was the first to make simultaneous records of the arterial and venous pulses to elucidate the clinical condition of the heart. His eternal question—"How much work can the heart do?" turned cardiac study and investigation into the channels revolving around the energetics of heart muscle. He was the first to investigate arrhythmias, and differentiated the "nodal rhythm," now called "auricular fibrilation." Although MacKenzie differentiated "nodal rhythm" now called "auricular fibrilation" all heart students know that the a.v. node may supercede the sinus and assume the function of the pacemaker, and that a circulating wave is responsible for "auricular fibrilation." At the same time he did much towards standardizing the proper medication of heart diseases.

What manner of man was this Scotchman, who became the leading cardiologist of his time, yet first, last and all the time retained his standing as a general practitioner? To him, that was a proud distinction. An appraisal of the man makes his scientific achievements all the more understandable. His early studies were unevently. He graduated from Edinburgh without showing any particular ability and went to the town of Burnley in the north of England, to act as assistant to Dr. William Briggs. If he had one outstanding characteristic, it was that of an essentially reasoning mind. Mackenzie became a general practitioner with seemingly no opportunity for specialization or fame beyond the confines of the parish he helped to serve. Dr. Briggs had the "clinical sense." He knew the "face of disease," without being able to impart to his assistant or anyone else the reasons why certain pictures represented to him certain human afflictions. Dr. Briggs could readily express an opinion about the prospects of a patient showing a given picture of

disease, and the young Mackenzie's reasoning mind continually raised the question of how Briggs knew this. His answer could not be found in text books. In after years none knew the "face of disease" better than Mackenzie, and what is of more importance, he could interpret it clearly to others.

The meaning of signs and symptoms in terms of the patient's future safety was his all concern. The answer was to be found in personal investigation, and this probing of the unknown, this search for what each symptom meant in the present and for the future was only solved when he came to the conclusion to "wait and see" what happened to the patient with the symptom. And this meant investigation and carefully kept records for Mackenzie's lifetime. Accumulated experience held the answer to the secret of Dr. Briggs' inward clinical sense. Accumulated experience and an understanding of the mechanism of symptoms and their prognostic significance was the great secret which guided Mackenzie to signal success. This country doctor became a master of research, not in a laboratory nor in an hospital with the latest equipment and appurtenances, but in the lives of his neighbors with whom he came in contact frequently over a long term of years.

A case of sudden heart failure in childbirth induced him to give careful attention to the heart. He awoke to the fact that in this case he had failed to recognize the meaning of certain symptoms. The text books gave him no clue. But accumulated experience did, although not immediately. About this time he acquired a pulse writer and began to study the tracings of irregularity, with particular anxiety to determine which among the different waves were dangerous and which safe. It took many years of comparison and observation, as well as a new machine invented by himself—the polygraph which recorded the throbbings of blood vessels in the neck—to answer the questions. His chief difficulty lay in interpreting the waves. Eventually Mackenzie succeeded. In turn he found out not merely how the heart as a whole beats, but how two separate chambers were beating, that the chambers sometimes fail to keep step with each other, and often beat out of their correct and proper order, hence the extrasystole. His discovery at first excited no special comment. In fact, the manuscript describing this and other important observations failed of publication in any reputable medical journal. Could any good thing come out of general practice? Editors and recognized cardiac specialists seemed to think not.

But this general practitioner plodded on, serene in the belief that he was getting at new truths. He was still trying to find out how symptoms of ill health were produced, and still waiting to see what would happen to human beings who showed those symptoms. He strove to discover the secret of irregular heart action, and his machine was but an aid to that solution and subordinate to it. In possession of his tracings and complete records and notes of symptoms, he was able to know, as he identified each type of irregularity, the importance of it as a sign of impending trouble, by re-examining the patient at intervals. Later, when new patients came to him with that particular symptom of irregularity, he was in position, out of accumulated experience, to make an accurate prognosis. His declaration that an extrasystole was of no serious consequence was received with indifference by the profession at large, and with derision by the specialists.

He identified and named another irregularity—the youthful type—and his experience told him that it was physiological and not harmful. Such prognosis was the result of many years of patient observation; he had the opportunity of seeing people in childhood; he watched children grow up and pass into manhood and womanhood, and observed how they bore themselves during periods of stress, at play and in hard work, and the symptoms observed were compared with those in people with failing hearts.

THE STUDY OF THE PULSE

In the same way, Mackenzie discovered later the dangerous type of irregularity, now known as auricular fibrillation, and he differentiated between murmurs that have no significance and those that mean danger. He was becoming the greatest heart specialist in the land, but years were yet to pass before he could obtain official recognition. He had come to the conclusion that the true nature of heart failure, as he knew it, was not understood by recognized heart specialists. These "giants" were acting on opinions which this country doctor from Burnley knew to be wrong. They viewed with grave anxiety cases which he regarded as trivial, and vice versa. And he was not slow to voice his opinions in the matter wherever he could

find audience. In the year 1902, being denied publication in the press of the profession, he published on his own account his first book—"The Study of the Pulse." It went forth unperceived by the "giants," but it received recognition in Germany and in America, whence medical men came to meet this rising authority. "Mackenzie, we know him not," said the English authorities in high places, with the taint of general practice still in their nostrils. "Away with him, we can have naught to do with a general practitioner."

Mohammed refusing to come to the mountain, the mountain decided to move into Mohammed's bailiewick. Mackenzie went to London to engage in special practice. His first year there was devoid of professional success, but he completed and put on the market his great book, "Diseases of the Heart," which fell among the "giants" with all the disturbing effects of an explosive bomb. It sold. And a second edition was required the following year. It was the medical text book of many years, and being of immediate practical utility, it found favor with general practitioners everywhere. With this thrown gauntlet, Mackenzie found himself famous overnight. He had acquired giantship; he was, in fact, the "giant" of them all. Those authorities at whose doors he had knocked these many years finally awoke to the fact that here was a man with a message that brooked no further denial, and they afforded him tardy recognition. "Was not this the inventor of the polygraph? Honor and recognition was due on that account." But due recognition was not then given him for his new and radical conception of cardiology. That was to come, but not without a typical Mackenzie fight for it.

Sir James Mackenzie went from success to success as a recognized heart specialist. Called self-opinionated and dogmatic, he lived to see his opinions prevail, and the Mackenzie school of thought in cardiology arises as a vital and original conception of medicine. He criticized and spoke as he felt impelled to do, and he was merciless in attacking error when he found it. Never did he forget his days as a general practitioner. General practice to him was the one and only place where he could serve best and learn most. He went back to it in his declining years—back to St. Andrews in Scotland, where he founded an institute for clinical research, where symptoms of the onset and progress of disease could be observed under the most favorable conditions. It is his monument, if monument is needed for the creator of a new conception in understanding human suffering.

The story of Sir James Mackenzie's career is but that of the development of the specialty of cardiology from a somewhat vague, hit-or-miss to an intensively scientific branch of medicine. Galen, Vesalius, Harvey. To this trio of immortals who labored long and honorably to further cardiac knowledge, may well be added a fourth. The Man of Burnley is possibly too near to us for proper appraisal, yet in our day and generation he must take the leading rank in a galaxy of outstanding heart men.

There yet remains a vast unfinished work in cardiology. Sir Thomas Lewis in England carries on, as do numerous well qualified men in France, Germany, and particularly in America. Many problems have yet to be solved, and it is not beyond the bounds of possibility that many far-reaching discoveries will be made within the span of your life and mine. Even now the stage is set for the denouement of important work in process. A proper appraisal of the cardiac muscle is long overdue. That was the Man of Burnley's goal. Much he did to set us on the right scent, and we will be deficient as strivers after scientific advancement and achievement if we fail in the quest that he so nobly began. We need a mechanical device to accurately test the strength of the myocardium. We need a formula that will tell the cardiac sufferer just how much and what kind of work he may safely do. We need heart men, with knowledge and understanding of heart energetics who can say with confidence to the cardiac sufferer, "this much and no more can you do."

ORDER OF BIRTH AS A FACTOR IN EPILEPSY

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The statement has been advanced by a number of workers on epilepsy, that the first born in a family is predominantly likely to be the epileptic child in the family.

This has been explained on the basis that the first child is not borne so easily as later children and, therefore, is more likely to birth injury. The argument has also been put forth that in more instances the first child is unwanted and in more instances efforts are made to produce

abortion and miscarriage, thereby subjecting the child to intrauterine damage.

Dr. G. F. Still states that statistical evidence obtained from the department of pediatrics, of King's College, London, England, shows that the first born child in a family is more likely to have certain malformations of mind and body than later born children, and that such malformations are not likely to recur in later births.

Riddock states that in epileptic families there are a greater proportion of epileptics among the first born than those born later.

At Craig Colony, Sonyea, New York, 2,000 cases were studied, showing that 6 per cent were only children, and that 25.6 per cent were first born.

It has also been asserted that the later children in large families are liable to physical or mental weakness. The explanation of this is stated to be that in the production of a large family of children there is an exhaustion or depletion of stock with resulting enfeebled offspring.

Presuming that 1,000 consecutive cases would show sufficient findings to conclude whether or not the order of birth is a factor in epilepsy, a study was made of 1,000 cases of families of two or more children, from the files of this institution.

The histories of one-child families were disregarded on the basis that histories of one-child families did not prove anything definite.

The histories were taken in groups of

TABLE SHOWING ORDER OF BIRTH OF 1,000 EPILEPTIC ADMISSIONS

Order of Birth	Children in family																	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
1st	61	44	50	25	23	10	13	6	5	1	1	0	1	0	0	0	0	240
2nd	35	42	28	22	26	18	12	9	4	3	5	0	0	0	0	0	1	205
3rd		38	32	28	20	20	13	11	12	3	4	1	0	0	0	0	0	182
4th			44	19	21	9	7	5	3	4	3	0	2	1	0	0	0	118
5th				21	13	27	12	8	6	2	3	1	0	1	0	0	0	94
6th					13	10	9	8	0	4	0	0	0	0	0	0	0	44
7th						12	6	8	9	2	1	0	0	1	0	0	0	39
8th							9	6	1	2	4	1	0	3	1	0	0	27
9th								7	5	1	1	1	1	0	0	0	0	16
10th									6	6	2	1	1	0	0	0	0	16
11th										5	2	1	1	1	0	0	0	10
12th											3	2	0	0	0	0	0	5
13th												2	1	0	0	0	0	3
14th													1	0	0	0	0	1
Total	96	124	154	115	116	106	81	68	51	33	29	10	8	7	1	0	1	1,000

ILLUSTRATION—Among the one thousand families, there were 51 families of ten children each.

In the ten-children families, the epileptic child was the—

1st born in 5 instances.
2nd born in 4 instances.
3rd born in 12 instances.
4th born in 3 instances.
5th born in 6 instances.
6th born in 0 instances.
7th born in 9 instances.
8th born in 1 instance.
9th born in 5 instances.
10th born in 6 instances.

Table No. 1

TABLE FORM GIVING ORDER OF BIRTH OF 1,000 FEEBLE-MINDED ADMISSIONS

Order of Birth	Number in family																	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
1st	73	48	47	32	15	11	8	4	2	1	0	0	0	0	0	0	0	241
2nd	74	42	38	24	18	13	9	9	1	1	1	1	0	0	0	0	0	231
3rd		60	35	30	19	12	9	6	1	2	3	1	1	1	0	0	0	180
4th			40	18	15	15	7	7	3	1	2	1	0	0	0	0	0	109
5th				27	12	9	11	6	5	1	3	0	0	0	0	0	0	74
6th					21	18	6	6	6	1	0	0	0	0	1	0	0	59
7th						11	3	6	6	2	2	1	0	1	0	0	0	32
8th							8	5	1	5	2	2	1	0	0	0	0	24
9th								8	1	3	2	0	1	0	0	0	0	15
10th									10	3	2	2	0	0	0	0	0	17
11th										4	3	0	0	0	0	0	0	7
12th											5	2	0	0	0	0	0	7
13th												1	1	0	0	0	0	2
14th													1	0	0	0	0	1
15th														0	0	0	0	0
16th															0	0	0	0
17th																0	0	0
18th																	1	1
Total	147	150	160	131	100	89	61	57	36	24	25	11	5	2	1	0	1	1,000

ILLUSTRATION—Among the one thousand families, there were 57 families of nine children each.

In the nine-children families, the feeble-minded child was the—

1st born in 4 instances.
2nd born in 9 instances.
3rd born in 6 instances.
4th born in 7 instances.
5th born in 6 instances.
6th born in 6 instances.
7th born in 6 instances.
8th born in 5 instances.
9th born in 8 instances.

Table No. 3

100 each, and the totals compiled in the tables shown at the completion of this article. Of the 1,000 cases studied, 24 per cent were found to be first born. As an illustration:

In the 96 families of 2 children each, 61 were first born and 35 were second born.

In the 51 families of 10 children each, 5 were first born; 4 were second born; 12 were third born; 3 were fourth born, and 6 were fifth born. There was not any sixth born; 9 were seventh born; 1 was eighth born; 5 were ninth born, and 6 were tenth born.

Of one family of 18 children the epileptic child was second in order of birth.

The order of birth and number of children in the family will be found in the accompanying table.

Were we to limit our conclusions to the two-children families, we would have to declare that the first born child has almost twice the risk of being epileptic as the second child, but as we go on with the study, into the families of more than two children, the predominant occurrence of epilepsy in the first child, as compared with later born children disappears. This is quite nicely illustrated in the 33 families of 11 children each, and in the 29 families of 12 children each. It will be observed that in each group, there was but one first born child afflicted.

A table compiled by Dr. Kay of the Michigan Home and Training School for the Feeble Minded, showing the order of birth of 1,000 feeble-minded admissions, shows but very little variation from the table compiled of 1,000 epileptic admissions.

Disagreeing with certain writers who claim that defective children are more apt to occur in large families than in small families, the tables compiled of 1,000 epileptic admissions and the table compiled of 1,000 feeble-minded admissions show a decided decline in the average number of afflicted children among children coming from the larger families.

The accompaning tables and charts are self-explanatory and are offered without further comment.

TABLE SHOWING ORDER OF BIRTH OF EPILEPTIC CHILD AMONG 6,082 CHILDREN IN 1,000 FAMILIES

Out of	1,000	1st	born	240	were epileptic—24.0%
Out of	1,000	2nd	born	205	were epileptic—20.5%
Out of	904	3rd	born	182	were epileptic—20.0%
Out of	780	4th	born	118	were epileptic—15.2%
Out of	626	5th	born	94	were epileptic—15.0%
Out of	511	6th	born	44	were epileptic— 8.6%
Out of	395	7th	born	39	were epileptic— 9.8%
Out of	289	8th	born	27	were epileptic— 9.3%
Out of	208	9th	born	16	were epileptic— 7.7%
Out of	140	10th	born	16	were epileptic—11.4%
Out of	89	11th	born	10	were epileptic—11.2%
Out of	56	12th	born	5	were epileptic— 9.0%
Out of	46	13th	born	3	were epileptic— 6.0%
Out of	38	14th	born	1	was epileptic— 2.7%
Total	6,082			1,000	

Table No. 2

TABLE SHOWING ORDER OF BIRTH OF FEEBLE-MINDED CHILD AMONG 7,217 CHILDREN IN 1,000 FAMILIES

Out of	1,000	1st	born	241	were feeble minded—24.1%
Out of	1,000	2nd	born	231	were feeble minded—23.1%
Out of	853	3rd	born	180	were feeble minded—21.1%
Out of	803	4th	born	109	were feeble minded—13.5%
Out of	653	5th	born	74	were feeble minded—11.3%
Out of	522	6th	born	59	were feeble minded—11.3%
Out of	422	7th	born	32	were feeble minded— 7.5%
Out of	333	8th	born	24	were feeble minded— 7.2%
Out of	272	9th	born	15	were feeble minded— 5.5%
Out of	215	10th	born	17	were feeble minded— 7.9%
Out of	179	11th	born	7	were feeble minded— 4.0%
Out of	155	12th	born	7	were feeble minded— 4.5%
Out of	144	13th	born	2	were feeble minded— 1.4%
Out of	139	14th	born	1	was feeble minded— 0.7%
Out of	134	15th	born	0	were feeble minded— 0.0%
Out of	132	16th	born	0	were feeble minded— 0.0%
Out of	131	17th	born	0	were feeble minded— 0.0%
Out of	130	18th	born	1	was feeble minded—0.71%
Total	7,217			1,000	

Table No. 4

ORDER OF BIRTH AND NUMBER IN EACH GROUP

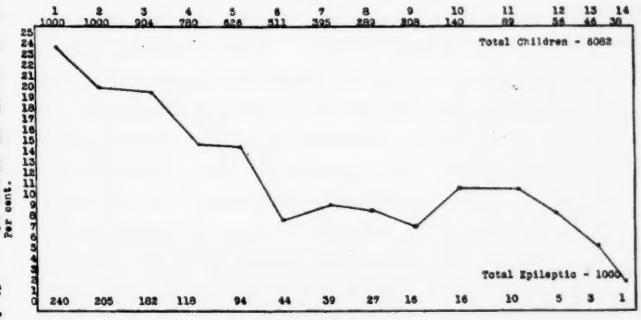

Chart No. 1.

Illustration—Among 6,082 children, including 1,000 epileptics, there were 626 fifth-born of whom 94 (15%) were epileptic.

Chart showing a study of 6,082 children, including 1,000 epileptics; the number of children in each order of birth group; the number of epileptics in each order of birth group; the percentage of epileptics by order of birth.

ORDER OF BIRTH AND NUMBER IN EACH GROUP

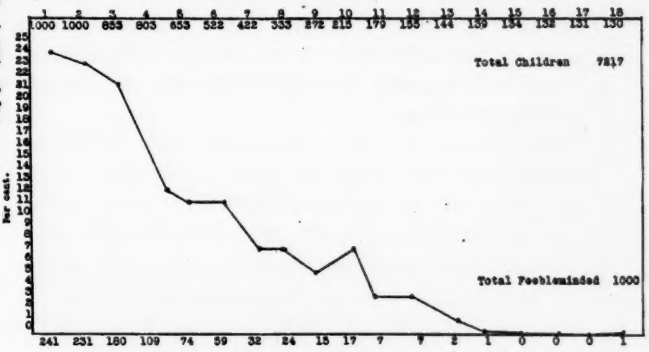

Chart No. 2.

Illustration—Among 7,217 children, including 1,000 feeble-minded, there were 803 fourth-born children, of whom 109 (13.5%) were feeble-minded.

Chart showing a study of 7,217 children, including 1,000 feeble-minded; the number of children in each order of birth group; the number of feeble-minded in each order of birth group; the percentage of feeble-minded by order of birth.

MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., *Commissioner*

THE ECONOMIC SIDE OF IMMUNIZATION OR TREATMENT

At a recent meeting of physicians the suggestion was made that if various immunization programs sponsored by various public health agencies were carried to their logical conclusion it would have the effect of curtailing the amount of medical practice available to physicians. In this connection there are several well established facts to be kept in mind.

No immunization program yet proposed in Michigan has been made sufficiently complete to reduce the sickness or death rate of the state as a whole. Local immunization in towns, schools or institutions have been the direct cause of the total absence of smallpox and diphtheria in these restricted areas. The county medical societies of four counties sponsored the immunization of all the school children of their respective counties. The result was a reduction of one-half the diphtheria deaths. In spite of the years of demonstration of the effectiveness of vaccine virus, over 500 cases of smallpox occur annually in this state; it is plain to see that the complete elimination of any of these diseases from this state is not an end near at hand.

The making of people immune to disease is the field of the private practitioner of medicine. Only in cases of indigency, emergency or for the demonstration of its value to the public is it sound policy for public health departments to do this work. Therefore, when this desirable state of immunity is conferred upon people it will be the direct result of the services of their own physicians.

Let us see, then, what the cold figures concerning this type of practice show.

In this state there are 100,000 people born annually. They are practically all susceptible to diphtheria from the moment they are born. They are highly susceptible from the age of six months until they are immunized. If these infants were all immunized, and for this service the physicians received from $5.00 to $10.00 per case, the net income would be from $500,000 to $1,000,000. Michigan has 5,000 cases of diphtheria annually. If the physicians received for their services, exclusive of all other costs, an average of $50.000 per case the income from this source would be $250,000. The increase in physicians' income from diphtheria would be from one-quarter to three-quarters of a million dollars, if we would immunize all children against this disease soon after they are six months of age, instead of waiting until they are stricken with the disease and then treating them.

Some maternity hospitals are vaccinating with vaccine virus all babies born in their institutions. Babies under ten days old very seldom have any general reaction and the immunity usually lasts for the whole lifetime of the individual. It is estimated that one-third of all births in this state occur in hospitals. If all hospitals were to establish this rule as part of their regular procedure, it would mean an addition of 30,000 immunized people in the state each year and an additional income of at least $60,000 to the physicians or hospitals.

When the 100,000 people born every year in Michigan are vaccinated against smallpox at birth, the income to the physicians would approximate $200,000. The 500 cases of smallpox that occur every year, treated at an average of $50.00 per case, bring physicians $25,000. Thus the physicians, by adopting the practice of vaccination at birth, would increase their income by nearly $200,000.

We have taken diphtheria and smallpox as examples of the economic advantage of immunization, but the same conditions apply to other diseases and to other public health measures.

With persistent educational work by the physicians and the Michigan Department of Health, these immunization programs will succeed in reducing the number of these preventable diseases and incerasing the earning of the physicians who actively sponsor this modern type of practice.

SUMMER RESORTS

Summer restorts, and their proper sanitary supervision, have come to be a topic of perennial interest to everyone concerned with the public health. The increasing tendency to migrate during the warm weather—and the modern facility of mi-

gration—are largely responsible. The "back to nature" urge has never had such an easy outlet, and the resort business has boomed in consequence.

Leaving the matter of sanitary safeguards to the vacationist himself, has not proved successful, judging from the amount of vacation typhoid. The serene assurance with which the average person leaves his carefully supervised environment and accepts unquestioningly the surroundings of the chance resort is nothing short of phenominal. The very citizen who would protest most vigorously any laxity in the supervision of his municipal water supply, or garbage collection, or sewage disposal, may be the one who blithely takes his family to "Dew Drop Inn" where they drink surface water from a shallow well near a makeshift toilet. Divine Providence works overtime in summer, but even so, the typhoid rate goes up.

A great deal of improvement has been made in the sanitation of summer resorts during the past seven or eight years. The various resort associations have been keenly interested, and the average vacationist is becoming better and better informed. More or less intensive inspections have been carried on by the Bureau of Engineering of the Michigan Department of Health during all of this period. For three summers a fully equipped laboratory truck was in the field, testing water and milk samples and inspecting waste disposal. The educational effect was undoubtedly good.

This summer, resort inspection has been started in the southwestern part of the state and the route will lead north from there. To show the items covered we reprint the inspection blank.

RESORT SANITATION REPORT
Michigan Department of Health

NAME OF RESORT
Owner ..... Manager .....
Body of Water ..... County ..... Township .....
Post Office .....
Size ..... People Interviewed .....

DRINKING WATER
Source .....
Well or Spring Construction .....
Remarks and Recommendations .....

PRIVIES
Type ..... Fly-tight ..... Use of lime or earth .....
Danger to Water Supply ..... Depth to Water Table .....
Recommendations .....

GARBAGE
Cans ..... Disposal ..... Flies .....
Recommendations .....

FISH CLEANING
Offal, how disposed ..... Fly-tight ..... Flies .....
Recommendations .....

BATHING BEACH
Polluted ..... How .....
Beach .....
Remarks .....

MILK SUPPLY
Stable .....
Manure .....
Cattle Tested .....
Recommendations .....

CAMP SITE
General Description .....

GRADE
Water Supply ..... Fish Cleaning ..... Buildings .....
Privy ..... Flies ..... Camp Site .....
Sewage Disposal ..... Bathing Beaches ..... General Opinion .....
Stream Pollution ..... Food Report ..... Character .....
Garbage Disposal ..... Milk Supply ..... Letter Recommended
Inspector .....
Date .....

CHILD HYGIENE FOR 1927-28

Activities of the Bureau of Child Hygiene and Public Health Nursing for the fiscal year ended June 30, 1928, have been almost entirely educational. Classes in child care for both adult and school groups, supervised study clubs, lectures to general audiences, surveys, and demonstration programs have made up the year's work. In all, 30,115 persons have been reached through these activities.

As in preceding years, classes have been conducted for women by a traveling unit made up of a physician and a nurse. These classes consisted of lectures and demonstrations on prenatal, infant, and child care. For the year just ended, nine counties have been visited, Presque Isle, Alpena, Antrim, Kalkaska, Manistee, Lake, Macomb, Livingston and Kalamazoo. The total attendance at the classes was 6,009.

Courses of study in child care have also been carried on for girls from ten to sixteen years of age. These are usually known as Little Mothers' Leagues, from their early predecessors in New York City. These also consist of lectures and demonstrations, and the total enrollment for the year in leagues conducted by department public health nurses was 6,263. These were held in Menominee, Otsego, Montmorency, Alcona, Crawford, Iosco, Lake, Huron, Muskegon, Ottawa, Clinton, Shiawassee, Jackson, and Kalamazoo counties. Such classes were carried on by local public health

nurses in Alger, Alpena, Wexford, Oceana, Ionia, Kent, Genesee, Allegan, Ingham, Oakland, Wayne, Washtenaw, Calhoun, Berrien and Cass counties. The attendance at these classes is not a matter of department record since they are a local activity and, aside from furnishing material for them, the department has no share in them.

A new type of work was begun this year in the form of self-directed study clubs. A representative of the Bureau of Child Hygiene and Public Health Nursing organizes the groups and instructs the local leaders. Outlines and references are furnished by the bureau, with special additional material for the leaders. This has proved to be a very popular service. Such clubs have been at work in Gogebic, Menominee, Baraga, Dickinson, Oceana, Marquette, Mecosta, Midland, Lapeer, Clinton, Ionia, Kent, Livingston and Monroe counties. A total of 236 classes have had an attendance of 4,595 women.

Breast feeding surveys have furnished a very direct avenue for the education of mothers in twelve counties. Where such surveys have been conducted, the approval of the physicians of the county has first been secured, and then home calls on the young mothers have been made by the public health nurse assigned. In Chippewa, Ontonagon, Missaukee, Schoolcraft, Alcona, Mackinac and Charlevoix counties, breast feeding survays have been completed during the past year, and in Houghton, Arenac, Crawford, Menominee and Montcalm counties they are still in operation. A total of 1,671 mothers have been visited during this time.

Demonstration work in prenatal nursing has been carried on in three counties, Emmet, Grand Traverse and Saginaw. The program in Emmet County was completed in December, 1927, and in Grand Traverse and Saginaw counties work is still in progress. These programs have been entirely under the supervision of the local doctors, started with their approval and carried on under their direction. A total of 2,006 visits, prenatal and postnatal, were made by the public health nurses assigned to the counties, upon 613 women. Two thousand nine hundred and ninety-six visits were made to mothers of young infants.

In addition to the regular class work, 256 talks were given by members of the staff of the Bureau of Child Hygiene and Public Health Nursing to general audiences totalling 10,964.

LABORATORY STAFF CHANGES

Several bacteriologists have recently joined the laboratory staff. Among them are Miss Mary Crowley who received her degree of Master of Science in Public Health from the University of Michigan and who did considerable research there in the School of Dentistry; Miss Emily Rickey who received her Bachelor of Arts degree at Cambridge University, England, and who has been studying toward a Certificate in Public Health at Massachusetts Institute of Technology, Boston; Miss Harriette Kibbe who has received her Bachelor of Science degree from Simmons College, Boston.

Miss Helen Bingham, who has been in charge of the Biological Distribution of the Michigan Department of Health, has resigned and will leave August 1st.

LABORATORY VISITORS

During June and July, Fellows of the Rockefeller Foundation have been spending several weeks in the Lansing laboratory, observing public health laboratory procedure and administrative practice. Dr. C. V. Natarajan, assistant at the Government Public Health Institute, Bangalore. India; E. H. Bramhall, director of the State Laboratory, Salt Lake City, Utah, and Miss Edith Kuhns, bacteriologist in the State Board of Health, Helena, Montana, all studied the methods used by these laboratories in their bacteriological and serological work.

Four doctors representing Sofia, Bulgaria, Madrid, Spain, Warsaw, Poland, and Japan spent a few hours going through the laboratory as observers.

VISITS OF ENGINEERS DURING MONTH OF JUNE, 1928

Inspections of Railroad Water Supplies: Total 19.

Alpena	Mackinaw City
Bay City (4)	Monroe
Detroit	New Buffalo
Frankfort	Petoskey (2)
Lansing (4)	Traverse City (3)

Inspections and Conferences, Sewerage and Sewage Disposal: Total 63.

Adrian (2)	Grand Blanc
Ann Arbor	Greenville (3)
Boyne City	Grosse Pte. (2)
Cambridge Jct.	Hastings
Caro (2)	Hillsdale (2)
Clio	Imlay City (2)
Croswell	Ithaca
Ecorse (2)	Kent City
Farmington	Lapeer (3)
Flint (4)	Mason (2)
Fordson (2)	Muskegon Hts. (2)

Nine-Mile Road (2)
Northville (2)
Plymouth (2)
Pontiac (2)
Rochester (2)
Romeo (3)
Royal Oak (2)
Saginaw
Sandusky (4)
Sparta
St. Clair
Trenton
Webberville
Ypsilanti

Inspections and Conferences, Water Supplies: Total 10.

Blissfield (2)
Boyne City
Grand Ledge
Grand Rapids
Ionia (2)
Quincy
Rockford (2)

Inspections and Conferences, Stream Pollution: Total 12.

Cambridge Jct.
East Lansing (4)
Fairview
Kent City (3)
Marysville
Muskegon Hts. (2)

Inspections and Conferences, Swimming Pools: Total 4.

Kalamazoo (2)
Lansing
Saginaw

Inspections and Conferences, Institutions: Total 3.

Beulah, Benzie County Infirmary, Septic Tank.
Northville, Detroit House of Correction, Sewage Disposal.
Northville, Wayne Co. Training School, Sewage Disposal.

Inspections and Conferences, Camps: Total 9.

Chelsea, Sewage Disposal for Camp.
Comins, Island Lake Camp Sanitation.
Fenton, Camp Inspection (2).
Interlochen, Water and Sewers for Interlochen.
Interlochen, Inspection of National High School Orchestra Camp.
Little Fish Lake, South Bend Boy Scout Camp, Water Supply and Sewerage.
Mears, Kum-Agen-Kamp, Inspection.
Orion, Boy Scout Camp, Inspection (2).
Torch Lake, Y. M. C. A. Camp, Septic Tank and Water Supply.

Inspections and Conferences, Miscellaneous: Total 12.

Bannister, Drainage.
Britton, Sewage Treatment for Local School (2).
Carleton, Nuisance.
Fordson, Baby Creek, Nuisance.
Freeland, Sewage Treatment for Public School.
Jackson, Sewage Treatment for Rural School.
Merril, Sewage Nuisance.
Scottville, Kraft Cheese Co., Nuisance (2).
St. Johns, Septic Tank.

Roadside Water Survey:

Trunk lines covered collecting samples, 3912 miles.
Samples collected, 905.
Trunk lines covered posting samples, 1746 miles.
Municipal water supplies posted, 32.
School wells tested, 160.
Gas stations and garage wells, 174.
Tourist camp wells tested, 50.

PREVALENCE OF DISEASE

June Report

Cases Reported

	May 1928	June 1928	June 1927	Average
Pneumonia	1,127	453	364	413
Tuberculosis	560	554	532	522
Typhoid Fever	17	22	29	38
Diphtheria	323	332	338	379
Whooping Cough	619	658	586	670
Scarlet Fever	1,176	941	920	991
Measles	4,769	3,712	898	3,991
Smallpox	88	223	152	221
Meningitis	23	28	18	15
Poliomyelitis	4	3	3	3
Syphilis	1,028	1,662	1,378	1,214
Gonorrhea	376	981	717	885
Chancroid	5	7	7	14

CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health

June, 1928

	+	—	+—	Total
Throat Swabs for Diphtheria				849
Diagnosis	55	203		
Release	70	141		
Carrier	10	360		
Virulence Tests	3	7		
Throat Swabs for Hemolytic Streptococci				596
Diagnosis	99	127		
Carrier	88	282		
Throat Swabs for Vincent's	42	216		258
Syphilis				7783
Kahn	1071	6674	35	
Wassermann		2		
Darkfield		1		
Examination for Gonococci	120	1274		1394
B. Tuberculosis				511
Sputum	67	395		
Animal Inoculations	3	46		
Typhoid				97
Feces		33		
Blood Cultures	1	25		
Widal	4	32		
Urine		2		
B. abortus	2	46		48
Dysentery				25
Intestinal Parasites				11
Transudates and Exudates				196
Blod Examinations (not classified)				166
Urine Examinations (not clossfied				495
Water and Sewage Examinations				1444
Milk Examinations				110
Toxicological Examinations				11
Autogenous Vaccines				1
Supplementary Examinations				168
Unclassified Examinations				492
Total for the month				14655
Cumulative Total (fiscal year)				162348
Increase over this month last year				2494
Outfits mailed out				18216
Typhoid Vaccine Distributed, c. c.				1713
Diphtheria Antitoxin Distributed, units				8213000
Toxin Antitoxin Distributed, c. c.				9690
Silver Nitrate Ampules Distributed, boxes				1867
Examinations made by Houghton Laboratory				1325
Examinations made by Grand Rapids Labortory				6213

THE JOURNAL

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AUGUST, 1928

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon.

EDITORIAL

MEDICAL SERVICE

If the cost of medical service has mounted during the past decade—a fact which no one can gainsay—the reason is very apparent. The first contributing cause and main one is the general advance in the cost of living. For those physicians who have been graduated the past ten or fifteen years the professional investment has been greater than that of any other period. This includes not only the monetary outlay but time and effort as well. The pre-medical requirements in the way of education as well as the lengthened medical course make medicine the most expensive of the learned professions. This fact compels many to accept salaried positions with clinics and hospitals, in order to retrieve the money spent on their training rather than suffer the so-called lean years which the older physician endured before he acquired a satisfactory income.

Then there is in some places an over production of doctors which makes them ammenable to the law of supply and demand. It is said that Canada is not able to absorb more than 40% of the graduates of her medical schools. The majority of the 60% find their way to the United States. Statistics are not available regarding the number of graduates from American schools who find satisfactory location. The situation finds an increasing number of doctors with lessened demand particularly as they are geographically distributed.

The work of preventive medicine has been effective in all directions. Typhoid, malaria, smallpox, diphtheria and a number of other infectious diseases are either almost extinct or well under control, compared with conditions that prevailed twenty-five years ago. Therefore medicine must direct its endeavors into a different field if it is to render the maximum service. The medical profession has been largely instrumental in bringing about the lessening of the ravages of infectious diseases, in spite of the contention that they have been indifferent to preventive medicine. The time has come, however, when there must be an adjustment in the work of the private practitioner. There is ample need of periodic examinations and the correction of the imperfections revealed. The experience of those who have examined men between twenty and thirty years of age for the army has demonstrated that nearly 40% of men at this early age were physically unfit for military duty, which means also that they were performing their civic duties with the minimum degree of health. The condition prevails today as nothing materially has happened since 1916 to alter the situation. Periodic health examinations and the treatment of diseased conditions found offers an immediate field for the physician and it is in line with the idea of prevention, which is the spirit of the present day health propaganda.

* * * * *

Michigan is a combination of the industrial and the rural state and represents in a sense the extremes of both with the problems of each. In the large manufacturing centers there are hundreds, sometimes thousands, constantly out of work with the tendency of industry to retire men as they approach the age of fifty. This makes necessary such institutions as the community union, a voluntary charity, and public welfare commissions, for

the purpose of dispensing municipal charity.

Then we have the rural medical problem, namely, the difficulty of providing sparsely settled districts with competent medical service. Again with prevailing medical standards the young physician feels it incumbent to locate where he has prospect of retrieving the greatest financial returns in as brief a time as possible and this means the city or larger town. Hence, there is an evident duty on the part of someone to see that those in the less widely settled parts of the state have access to physicians in case of illness. How is this to be done? The first step in the solution of these problems is their clear comprehension.

In the case of large industrial centers, there seems to be conditions of a social or industrial nature, to remedy which we as a class cannot exert any very great influence. It requires a new kind of statesmanship, industrial rather than political. One thing, however, that can be insisted upon is that charitable service be limited to the really indigent. This will not be easily accomplished. There has been such an impetus to paternalism within the past few years that many have come to look upon the doctor as a sort of public servant whose service should be available for the asking.

THERAPEUTICS

July Harper's magazine contains an interesting as well as timely article by Dr. Joseph Collins the noted neurologist who looks at love, life, literature and a number of other things. Dr. Collins writes this time on group practice in medicine. He is always interesting whether one agrees with him or not. Incidentally, he deals with the subject of therapeutics and scores the medical profession for the lack of emphasis medicine has placed in the past on this which to the patient is the all important matter. We have our share of keen and reliable diagnosticians but in the field of treatment we do not make such a brilliant display. In fact, diagnostic methods have been developed to such a degree that to master them is a feat of mental gymnastics.

But when it comes to the matter of treating patients not so much may be said. Druggists' files reveal prescriptions that are mixtures of incompatible ingredients; one could hardly guess the object the prescriber had in mind. Not long ago a prominent banker declared that he resorted to osteopathy whenever he or any member of his family became ill. His principal reason was what he declared to be his disbelief in drugs. The physician's armamentarium should include not only drugs but any agent, water, heat, light, electricity, massage, diet, anything that will aid in the restoration of the patient to health or alleviate his suffering. Collins goes on to say that, "Aside from immunizers, antitoxins, and parasite killers, a man may practice medicine satisfactorily to himself with two drugs; opium and digitalis; and if he knows how to use properly the physical measures enumerated he can practice satisfactorily to patient and public." The list of drugs might be extended to at least a dozen, which, with a thorough knowledge of their action, would accomplish more than the whole materia medica as usually learned by the student. Then there is what may be termed medical psychology which, if properly understood, would be of untold value. We have heard much of late of constitution clinics and the necessity of treating the "mind body," for as Collins says, "It is not only the malign microbe the physician has to combat; it is the unclean spirit."

THE A. M. A.

The seventy-ninth annual session of the A. M. A. is a matter of history. Those who attended were well repaid for the time taken. There were 138 registered from Michigan, one hundred and thirty-eight out of appoximately 4,000 doctors in the state. As is to be expected, the attendance at the great national conventions varies with the location. When held in the large centers of population the attendance is the largest. The registration from Minnesota was 1,466, a number that could be well matched by the membership of the Wayne County Medical Society, were the convention held in this state. The total registration was a little under 5,000 out of the A. M. A. membership of 97,000.

A feature that must have impressed favorably every visitor was the scientific exhibit. It was not only instructive but very complete. In a graphic way it indicated the great progress being made in American medical science.

Minneapolis proved an ideal location for the convention. The new auditorium housed the major activities, including the scientific and commercial exhibits, and meetings which could not be accommodated there were held in nearby hotels easily accessible.

An invitation was extended by the Wayne County Medical Society to hold the eightieth annual convention in Detroit but this was late in being presented. It appears that all invitations should have reached the Secretary of the Association at least sixty days before the convention. Portland, Oregon, was chosen as the place of the 1929 meeting.

Dr. F. C. Warnshuis of Grand Rapids was re-elected Speaker of the House of Delegates for the seventh year.

Dr. M. L. Harris of Chicago is the new President-elect.

THE PASSING OF THE TEACHER

"What the student takes from the lecture of a good clinical teacher is by no means limited to a mass of facts that might be acquired quite as well from his books; the student is introduced into the mind of his teacher, he sees how the latter approaches his problem and is himself moulded by the example of his teacher. It is unthinkable to fail to recognize that the personalities of clinical teachers as Billroth, Trousseau, Charcot, Osler, Frerichs, Gerhardt have been without influence on young physicians."—Professor Freidrich Muller of Munich.

This is refreshing in an age when everything is turned to research, and true pedagogics is being more or less disparaged. While the importance of research is not likely to be overemphasized, the importance of teaching should be held in equally high esteem. The teacher is the interpreter, often the evaluator, of the findings of the research laboratory; and if he is blessed with a pleasing personality and an enthusiasm that is contagious, his influence on his generation is beyond question. How many recall such persons not only in medicine but in their earlier academic days whose influence on their lives has been priceless?

EDITORIAL NOTES

A prominent oto-laryngologist writes this Journal enclosing the selection which appears on the cover, with the remark that it, "might not be inappropriate to your front page, where already you have found room for good things." Thanks are accorded the contributor for the stimulating intimation contained in the quotation.

The Women's Auxiliary of the Wayne County Medical Society extends to all doctors' wives who are contemplating visiting Detroit during the convention of the State Society in September, a cordial invitation to be its guests during that time. Arrangements are being made for sight seeing and shopping tours, and there will be various forms of entertainment provided for all the ladies.

Much credit is due the Michigan state police and also the newspapers for the war on quacks. The work of the police is much more effective when accompanied by unwholesome publicity. Quackery always thrives when allowed to make its blatant claims unchallenged. We would suggest that property owners renting property to be used for fraudulent or criminal purposes be penalized by having it "padlocked" for a year or more according to the gravity of the offense. The quack and other malefactors cannot carry on their nefarious business without some place to shelter it.

The Extension Division of the University of Michigan has announced an office in Detroit at the Cass Technical High School. The object is to get in closer touch with numerous groups of Detroiters who are interested in adult education. For a number of years past the Extension Department of the State University has conducted credit courses in Detroit. The growing demand for this kind of work has prompted the steps taken in the way of establishing a local office in the city. General information about the university or special information regarding Extension work, may be had by applying to Mr. C. A. Fischer, Assistant Director, Cass Technical High School, Detroit, Mich. The Extension Division, under the able directorship of Dr. W. D. Henderson, has rendered invaluable service to the work undertaken by the medical profession of the state, and Joint Committee on Public Health Education.

"Whilst the successful, nay, the competent practice of medicine—an art which includes that of surgery—may be and often is compatible with ignorance of the history of medicine, he is the best physician in the classical and fullest sense of the word who unites a mastery of his art to an intimate acquaintance with the great historical doctrines upon which they are based," says the medical historian, Crookshank. With the object of devoting more attention

to the historical aspects of medicine, this Journal will publish from time to time papers dealing with the history of medical and surgical specialties. All knowledge is historical inasmuch as it is a record of observed facts of human experience and writing and of human thought. Even the medical or surgical papers based on the experiences and researches of today are the bricks of which the historical superstructure is made. The Journal is indebted to Dr. John L. Chester of Detroit, Mich., for the interesting account of Cardiology which appears in this number of the Journal of the M. S. M. S.

QUACKS AND THEIR VICTIMS

(From the Detroit Free Press)

The people of Detroit must wish every success to the crusade which the state authorities are carrying on against fake healers.

This community has been sorely afflicted by every brand of medical quackery, preying on the ignorance and the purses of precisely those men and women who could least afford to be victimized. Evidence gathered from time to time by local medical societies indicated the extent of the peril. During the few weeks of their present campaign the state police have put several of the charlatans out of business, while many more are marked out for similar treatment.

It may be as well that the raiders have centered their attention on the metropolis. Possibly here and there in the smaller towns of Michigan the medical quack survives, but in such places he is not likely to remain long undiscovered. In teeming, growing Detroit, despite the watchfulness of the medical profession, whose duty it is to warn the public against frauds posing as medical men, he often operates unmolested for years.

Since it may be doubted whether the time will soon arrive when popular enlightenment will have rendered medical quackery utterly unprofitable, the only hope seems to lie in vigilant, energetic enforcement of our anti-quack statutes. The state police authorities are to be commended for the prompt way in which they have already separated some of the imposters in Detroit from their prey.

ODE TO A SKELETON

Behold this ruin, 'tis a skull
Once of ethereal spirit full
This narrow cell was life's retreat;
This space was thought's mysterious seat.
What beautiful visions filled this spot?
What dreams of pleasure, long forgot?
Nor hope, nor joy, nor love, nor fear
Hath left one trace of record here.
Beneath this mouldering canopy,
Once shone the bright and busy eye,
But start not at the dismal void,
If social love that eye employed.
If not through evil fires it gleamed,
But through the dews of kindness beamed,
That eye shall shine forever bright
When stars and sun are sunk in night.
Within this hollow cavern hung
The ready swift and tuneful tongue,
If falsehood's honey it disdained,
And when it could not praise was chained;
If loud in virtue's cause it spoke,
Yet gentle concord never broke,
That silent tongue shall plead for thee
When time unfolds eternity.
Say, did these fingers delve in the mine,
Or with the envied ruby shine?
To hew the rock, to wear the gem,
Avails but little now to them.
But, if the page of truth they sought,
Or comfort to some mourner brought,
These hands a greater need shall claim
Than all that wait on wealth and fame.
Avails it whether bare or shod
These feet the paths of duty trod?
If from the bowers of ease they fled,
To seek affiction's humble shed;
If grandeur's guilty bride they spurned
And home to virtue's cot returned,
These feet, with angel's wings shall vie,
And tread the palace of the sky.

—From the Iowa State Medical Journal.

NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

Dr. Leo Dretzka of Detroit, left July 2nd for London, England, where he will attend the International Cancer Conference. From there he will go to Russia, where he will visit the Clinics at Moscow and Leningrad.

Dr. James E. Davis, Professor of Pathology in the Detroit College of Medicine is taking a two months vacation at Traunmuhle Bad Aussee Styria, Austria.

Dr. John A. Wessinger has been re-appointed health officer at Ann Arbor, with an increase of salary of $1,000.00 per annum. Dr. Wessinger has served the city, in this capacity, for twenty-two years.

DEATHS

DR. FLEMING CARROW

Dr. Fleming Carrow died suddenly at his summer home at Traverse City, June 23rd. Dr. Carrow was born at Still Pond, Md., in 1855. He graduated from George Washington University in 1870 with the degree of A. B. Four years later he received his M. D. degree. In 1903 he was given the honorary degree of M. A. at the University of Michigan. During the years 1874 to 1885 he was a surgeon in the service of the Chinese government and in 1887 he became professor of ophthalmology at the University of Michigan. Following his retirement from the faculty in 1904 he practised his specialty in Detroit. He was a member of the Michigan State Board of registration in medicine, the American medical Association, Anthropology Society of Paris, The American Association for the Advancement of Science, the Royal Society of Portugal and the Detroit club. He is survived by one son, Herbert P. Carrow of Detroit.

MEDICO-SOCIAL AND ECONOMIC

"The old order changeth," quotes Dr. George E. Vincent. To this changing order all, even doctors must adapt themselves and this adaptation, he goes on say, takes place not in elaborate schemes of reform but by piecemeal, by trial and error. To say we are living in an age of transition is to utter a truism. Change, however, is one of the characteristics of life; so heaven help us when the time comes when we have attained a stable equilibrium. But sometimes the rate of progression is faster than at others. Today there is a manifest feeling of dissatisfaction not only among the people at large but in the medical profession as well. On the one hand is the high cost of health, especially of regaining it when once it is impaired; on the other, the physician feels he is not adequately remunerated for the time, cost, and effort he has put into his medical training and what he considers is his legitimate field is being encroached upon by various institutions and agencies which are meeting him in unfair competition.

Among the influences at work during recent years is the presence of a large number of persons more or less scientifically trained who are engaged in public health work and whose object is the prevention and treatment of disease in the most socially effective way. The time honored relationship between physician and patient means nothing to them.

County and state medical societies were the first to recognize the necessity of sanitation and preventive measure in regard to health. The early activities were limited to the control of water supplies and the suppression of epidemics. Later, departments of vital statistics were added. Many, perhaps the majority of physicians, still feel that the proper function of public health organizations is the organization of preventive agencies and not the diagnosis and treatment of disease.

CHARGES BELOW COST

According to H. H. Moore,* official laboratories have been able to make diagnostic examinations at a cost much below that charged by commercial laboratories and by commercial laboratories is meant not those operated by laymen but those run by qualified physicians. As an example of some of the fees charged we have Wasserman, San Fransisco board of health, 50c. Boston Dispensary, X-ray of entire mouth, $2.50 to $4.50; complete gastrointestinal examination, Boston Dispensary, $5.00 to $7.00. This does not include overhead. The doctor whose practice is affected helps pay the overhead. The average cost of examinations by state health departments is said to be approximately $1.00 per examination. It is said that in Pittsburgh the majority of tonsilectomies are charity cases. To what extent this form of charity prevails in other American cities is not known. At a medical meeting recently attended by the writer, one of the younger members made the remark, "I wonder if any of you realize that when you send specimens of blood or urine to board of health laboratories, you are aiding 'state medicine'? One very efficient clinical laboratory in this city had to close its doors simply because many of the doctors took advantage of the opportunity to get this work done for an insignificant charge."

The reader's attention is called to an article by Dr. Guy L. Keifer on the Economic Side of Immunization or Treatment in this number of the Journal M. S. M. S. in which he shows how the matter of immunization in this state may be accomplished to the economic advantage of the physician as well as great personal advantage to the public.

DUTY OF A. M. A.

The American College of Surgeons deserves credit for their initiative and for what they have accomplished in raising the standards of hospitals. This is a matter, however, which should be undertaken and carried on by the American Medical Association. Why? Because the A. M. A. represents the entire profession and not any particular specialty within the profession. The hospital is the doctor's workshop. It should be controlled, therefore, by the profession as a whole and this can be done best by organized medicine as represented by its national association. There are hospitals, and this does not refer to teaching hospitals, which engage in unfair competition with the profession, particularly in laboratory diagnostic work. In a city in this state a hospital undertook to make clinical laboratory examinations at such a ridiculously low rate, for ambulant patients, that a physician who had limited his work to that department of medicine had to give it up and go into general practice.

Not only is an occasional hospital making inroads into the practice of medicine, but also many industrial concerns are as well. Every doctor living in the large industrial cities in this state meets this competition in some form or other. One large industrial concern in Michigan is reported as offering to do X-ray work for its employees and their families and friends to the extent of making radiographs which are given the patient at a price that scarcely covers more than the cost of the materials used. These are taken by the patient to his doctor who may or may not be familiar with the reading of X-ray films and in the end a local roentgenologist is called to interpret them. He is at a disadvantage not only in the loss of his fee, but in being asked to read plates the technique in the making of which he had no hand.

THE ELIMINATION PROASS

The result of it all is first the elimination of the specialist in laboratory methods, the roentgenologist, the internist; even the surgeon is not safe. Time was when the individuality and personality of the surgeon counted for everything with the patient. Several large hospitals and clinics have done a lot towards discounting the

* American Medicine and the People's Health, by H. H. Moore, Public Health Economist; United Public Health Service. This book contains an immense amount of data on a subject that is of vital interest to every reader of this Journal. It might also be mentioned that Mr. Moore will assist the Committee on the Cost of Medical Care which is mentioned in the paper. The work bears the imprint of D. Appleton & Company, New York.

personal element in surgery. In other words, the surgeon is becoming depersonalized. Patients applying to these institutions for surgical care accept the surgeon assigned to them.

As a profession we are individuals and have shown little inclination to group action. Our meetings and conventions have as their objective the advancement of our science and art rather than self preservation. Dr. Joseph Collins in a recent number of Harpers has put forth a strong plea for group medicine. This is only possible where the individuals composing the groups enter it on some basis of remuneration each in proportion to his contribution in training, prestige and experience, regardless of specialty.

Maybe we are helpless as the erstwhile independent grocer with the arrival of the so-called "chain" store which operates under the "cash and carry" system.

"COST OF MEDICAL CARE"

The whole subject of the cost of medical care is to be investigated by a special committee made up of representatives of the American Medical Association, the Metropolitan Life Insurance Company and the United States Public Health Service. The period of investigation will include the next five years. It is the expressed hope of the committee that their labors will throw substantial light upon: "The extent to which the incidence of sickness falls upon various economic and social classes in different types of communities, and the variation in cost to the individual families; the proportion of the cost of medical care in typical communities borne by the patient, the community, and the physician himself; the financial returns to physicians with various types of practice in particular areas and under particular conditions; and the comparative adequacy and economy of medical care under diverse plans and programs of emergency or distributed payment."

Dr. Olin West, Secretary of the American Medical Association, is said to have declared the one great outstanding problem before the medical profession today to be that involved in the delivery of adequate scientific service to all the people, rich and poor, at a cost which can reasonably be met by them in their respective stations in life.

Then there is the other side to the question which is expressed by Dr. Ray Lyman Wilbur, President of Stanford University and former President of the American Medical Association, "Physicians as a group are not earning adequate incomes; and for many, hospitals and other facilities for scientific work are lacking." With the cost of medical education, with the amount of free service or services not paid for, the problem is a vexed one for the physician and his family. Physicians have from time immemorial contributed of their time and efforts without charge towards preventive work. In addition to what the physician has contributed directly towards the matter of diagnosis and treatment, to his credit goes the large effort towards the elimination of preventable diseases.

Dr. Sinai has been assigned to the investigation of conditions in Michigan. The writer knows of no happier choice. Dr. Sinai is well known in the state as an associate of Dr. W. D. Henderson of the University of Michigan Extension Department. Having immediate charge for a number of years of the program of Public education in medicine which has been carried on by the Joint Committee on Health Education, Dr. Sinai has the medical viewpoint from several years of contact with the profession pretty much over the state. This, together with his special training, affords him an impartial approach to the subject of "Cost of Medical Care."

J. H. DEMPSTER.

PROLONGATION OF LIFE

Instead of using alchemy, or the numerous supposed "elixirs of life" in order to retain youth, the late Dr. A. C. Eycleshymer, of the University of Illinois Medical School, points out in a manuscript left in incomplete form by his death that the quest for youth is not less popular today than it has been for countless ages, but the search today is becoming more and more scientific, and so is coming nearer to success than any of the older processes.

This article was prepared for publication in the Scientific Monthly by Dr. Eycleshymer's friend, Dr. E. P. Lyon.

The idea of an elixir of life dates back to Biblical times, when the "tree of life" is introduced in the Garden of Eden. Adam was sent from the Garden "lest he put forth his hand and take also of the tree of life, and eat, and live forever." This idea that there must be somewhere a tree which was intended to preserve man from disease and death prevailed for ages.

Today, through the avenues of empirical medicine and sanitary science, the expectancy of life has been greatly increased. The average span of life was increased about four years during the seventeenth and eighteenth centures, about eight years in the first three-quarters of the nineteenth century, and about sixteen years since 1875.

"While we have thus made much progress," Dr. Eycleshymer states, "we still lack information in easily accessible fields". While there is always interest shown in plants and animals, "the study of man, with a view of preserving and accentuating, in the offspring, the sterling qualities found among the ancestors, has not received serious consideration. Yet we know that heredity is one of the chief factors in longevity."—Science Service.

SICK PERSONALITIES NEED DOCTORS' ATTENTION

A patient's emotions are as much a part of him as his heart or stomach, and doctors should take this inner life of the patient into careful consideration, Dr. Lloyd H. Ziegler, of the Mayo Clinic at Rochester, declared, speaking before the American Psychiatric Association. "Many of the milder types of emotional disorders are seen by general practitioners of medicine who diagnose them as nervous dyspepsia, gastric neuroses, and similar maladies," Dr. Ziegler said. "If such diagnoses cause physicians to confine their treatment to individual organs, rather than to sick personalities, patients may continue to search for relief from the emotional distress, and may go far and wide out of the medical profession." Dr. Ziegler reported cases in which emotional distress was associated with maladies of the heart ,lungs, stomach and other organs. Anxiety and depression doubtless may bring about changes in the chemistry of the body causing physical disorders or else lowering the patient's resistance to infectious disease he stated—Science Service.

OUR OPEN FORUM

Affording Opportunity for Personal Expression

Editor Journal Michigan State Medical Society—Being one of the informants as mentioned in the reply of the Council to the editorial of the Illinois State Medical Journal of May, I cannot help taking exception to at least one of the remarks in that letter namely that the information in that letter was misinformation. If there were any untruths in those communications we will be glad to have them pointed out and make suitable amends, but we do not like the inference that the statements were not based on facts. We would recommend that instead of getting just briefs of the statutes, you publish them in full and let everyone judge for himself. So far as the editor of the Illinois Journal was concerned, he was furnished with a complete copy of the Michigan statute for 1927.

Now, in regard to the crippled children's act. It has been my good fortune or possible misfortune to bump into the actual workings of the law. I trust you will accord space in your Journal, that all may know just what happens. A certain family were patients of mine about three years ago, at which time the mother and son were both in the hospital for two weeks, at which time they occupied semi-private rooms for which they paid cash. They paid me $150.00 for professional services. Last October I did a minor operation for the same family for which I was paid $50.00. Three weeks ago a son was brought to me complaining of pain in the right leg. Examination showed very little outside of slight atrophy. X-ray consultation was advised. In the meantime it was noised about that the bone specialist from Ann Arbor was to hold a clinic at Mount Clemens and they were advised to take the boy there. This was done. X-rays were taken and a diagnosis made of a joint condition. Without further inquiry, they were advised to take the boy immediately to Ann Arbor. Since that time the nurse on the job has called repeatedly at the home urging them to go at once and made the statement that these doctors were undoubtedly the best in the state and that the boy would be very likely be crippled for life if not treated at once and that if the operation was done here locally it would cost no less than $1,000.00. The family has returned to me. They are very much alarmed about the boy's condition. They do not care to take him to Ann Arbor to be left six or seven months as informed was necessary, if he can be treated at home and still they realize they cannot afford to pay $1,000.00 for treatment but are very willing to pay a reasonable fee and are not by any manner or means asking for charity.

This then, although a single incident, affords I believe a wonderful example of the actual operation of the crippled children's act. This is one of the bills that our Councillors, officers and hired attorneys approved as a wonderful addition to our statutes and could in no way "be construed as State Medicine Measures."

If this is not State Medicine or its equivalent, call it what you want, then what in the name of common sense is it?

How would an ethics committee regard a private practitioner, or for that matter, any hospital, outside the U. of M. who would announce with a blare of trumpets, newspaper publicity, statements of nurses either direct or by implication that he was the best in the state at fees far below those of his colleagues? Please answer that. If the brand of ethics that you and I must submit to is not good enough or does not apply to our University colleagues, there must be something wrong.

If these measures are not measures of State Medicine, let's have an explanation of what they are. Not a simple denial. Let those who approve them explain through the forum of the Journal their sterling qualities and the benefits that will accrue to the medical profession.

If this was not "Politic" to confine in the rank and file at that time surely no damage can be done now.

If this is what our officers and representatives had in mind when they approved these bills, if they knowingly and complacently fostered them and can give no satisfactory explanation for their actions, these statutes are the most glaring indictment of betrayal of the trust vested in them and a monument to an administration of which they may never be proud.

The days of "honorary" offices in a medical society are passed, and the day when a man holds his office on merit alone is here. Let the electorate scrutinize with care the accomplishments and associations of our future candidates, and let the candidate from the platform declare himself on the important issues, or the prediction of Dr. Albert E. Bulson, Editor of the Indiana State Medical Journal will surely come true.

Dr. Bulson says "Unless the medical profession awakes to the dangers that threaten it will not be ten years before a majority of the medical men of this country will be occupying little better than clerical positions with clerical incomes and scientific medicine for the masses will have greatly deteriorated as a result of the loss of independent, incentive and self respect of the individual physician.

—E. C. Baumgarten, M. D.

A WARNING

Secretary Michigan State Medical Society.

It is necessary to advise the physicians of this part of the state regarding a woman who is undoubtedly a morphine addict. Her story is that she is suffering from a kidney calculus, and that being away from her regular doctor must have relief. She claims Greenville as home, she is about 5 feet 4 inches, weighs about 150 to 160 pounds, is somewhat on blonde order. Upon interrogation she has been to about all the physicians in Greenville, also to Butler at G. R. Clinic, and I also infer that she doubtless has been under addict treatment at Ann Arbor.

Needless to remark that she should be put under restraint.

Jay Odell Nelson, M. D.

July 5, 1928.

COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

EDITOR: Frederick C. Warnshuis, M. D.

Secretary Michigan State Medical Society

Official Program—108th Annual Meeting, Michigan State Medical Society, Detroit, Michigan

September 26-27-28th, 1928

OFFICIAL CALL

The Michigan State Medical Society will convene in Annual Session, in Detroit on September 26, 27, 28, 1928. The provisions of our Constitution and By-Laws and the official program will govern the business and transactions of this annual session.

Herbert E. Randall, President.
R. C. Stone, Chairman of the Council.
Henry R. Carstens, Speaker.

Attest: F. C. Warnshuis, Secretary.

DAILY SCHEDULE

Headquarters: Book-Cadillac Hotel.

September 25th

8:00 P. M.—Council Meeting.

September 26th

10:30 A. M.—House of Delegates.
2:00 P. M.—House of Delegates.
7:30 P. M.—House of Delegates.

September 27th

9:00 A. M.—Section Meetings.
1:30 P. M.—Section Meetings.
7:45 P. M.—First General Session.

September 28th

9:00 A. M.—Section Meetings.
11:45 A. M.—Second General Session.
1:30 P. M.—Section Meetings.
8:00 P. M.—Public Meeting Orchestra Hall.

HOSPITAL CLINICS

The several hospitals of Detroit will present a series of medical and surgical clinics on September 24th and 25th. Details will be announced in the September issue and will be posted at the hotels.

EXHIBITS

A splendid Scientific and Commercial Exhibit will be conducted on the mezzanine floor of the Book-Cadillac Hotel.

MEETING PLACES

All the Sessions, General Meetings, Registration and Exhibits will be located on the Mezzanine Floor of the *Book-Cadillac Hotel.* The Registration Booth will be opened at 10:00 a. m., September 26th.

ENTERTAINMENT

Entertainment Features will be imparted in the September Journal.

FIRST GENERAL SESSION

Time: Thursday Evening, September 27th, 7:45 P. M.

Place: Main Ball Room.

8:00 P. M.

1. Call to Order,
   President H. E. Randall, Flint.
2. Invocation.
3. Welcome, President Wayne County Society.
4. Announcements, Secretary.
5. President's Annual Address,
   H. E. Randall, Flint.
6. Address.
7. Nominations for President.
8. General Business.

SECOND GENERAL SESSION

Time: Friday, September 28th, 11:45 P. M.

Place: Main Ball Room.

1. Call to Order.
2. Report of Nominating Committee.
3. Introduction of President Elect.
4. General Business.
5. Adjournment.

SCIENTIFIC SECTIONS

PEDIATRICS

Chairman, R. M. Kempton, Saginaw.
Secretary, Wm. S. O'Donnell, Detroit.

THURSDAY MORNING SESSION

September 27th

1. Thyrotoxicosis in Children—Dr. Hugo A Freund, Detroit.
   A brief description of the histology of the

normal thyroid at birth, in early childhood and during adolescence will be given. Illustrations of the eariest changes occurring in beginning colloid goiter in childhood will be shown. The histopathology of thyroids in children suffering from thyrotoxicosis will be demonstrated. Case histories and reviews of throtoxicosis together with metabolism studies and treatment will be presented.

2. The Treatment of Erysipelas with Erysipelas Streptococcus Antitoxin—Dr. John E. Gordon and Dr. D. C. Young, Detroit.

The severer cases of 256 erysipelas infections observed during 1927 were treated with the recently developed erysipelas streptococcus antitoxin. The serum exerts a favorable influence on the duration of the fever, toxemia and the period of incapacitation. The complications are not appreciably influenced.

3. The Etiology of Measles and Its Specific Treatment—Dr. N. S. Ferry, Detroit.

A review of the experiments carried out with the Streptococcus Morbilli isolated by Ferry and Fisher from the blood in early cases will be presented together with the experimental tests with measles toxin prepared from this organism and the recent clinical work with measles antitoxin obtained from horses immunized with measles toxin.

4. The Diagnosis and Treatment of Pyloric Stenosis—Dr. Grover C. Penberthy, Detroit.

This will include the analysis of a series of cases studied and operated upon at the Children's Hospital, a discussion of the differential diagnosis, medical management before and after operation, the operative procedure and the report of the final results in cases followed after leaving the hospital.

THURSDAY AFTERNOON SESSION

1. The Desirability of Seeing the Young Child as a Unit in Relation to Medical Diagnosis.

This paper is given through the cooperation of the Staff of the Merrill-Palmer School, Detroit: Dr. E. Lee Vincent, Dr. Rachel Stutsman, Dr. C. A. Wilson, Miss Winifred Rand, Miss Mary Sweeney, Miss Winifred Harley and Dr. Icie G. Macy. There will be a discussion and demonstration of the correlation of the mental, nutritional and educational findings regarding young normal children with the influence of the family relations and the significance and the interpretation of these in their relation to medical findings. This will also include the contributions of the biological chemistry laboratory to such case studies.

FRIDAY MORNING SESSION

1. The Role of Blood Transfusions in the Treatment of the Diseases of Children—Dr. Marsh W. Poole, Windsor, Ont.

Blood transfusion has become such a popular form of therapy in so many conditions encountered in infancy and childhood that its value is sometimes questioned. In this paper an attempt has been made to analyze the experience gained at the Children's Hospital, Detroit through a large series of transfusions.

2. The Study of the Active Immunization Against Scarlet Fever—Dr. Bernard B. Bernbaum, Detroit.

This study is a comparison of the active immunity against Scarlet Fever as shown by the Dick test produced by Larson's toxin and Dick's toxin. A group of children were Dick tested and the positive reactions were divided into two groups. One group was immunized with Larson's toxin and the second group was immunized with Dick's toxin. These two groups have been tested for immunity against scarlet fever for two years.

3. The Practical Methods of the Production of Active Immunity in Infectious Diseases—Dr. Roy W. Pryer, Lansing.

This paper considers primarily diphtheria toxin immunity as produced by diphtheria toxin-antitoxin mixture, diphtheria toxoid and purified diphtheria toxoid and ricinoleated diphtheria toxin, together with a brief review of the literature and a summary of the advantages and disadvantages of each method with the possibility of applying some of these methods to other tests as for instance in scarlet fever.

4. The X-Ray examination for Pulmonary Tuberculosis in Children—Dr. C. C. Birkelo, Detroit.

In the X-ray examination the treacheo-bronchial nodes are readily recognized and need not be guessed at when producing symptoms. A tuberculous parenchymal infiltration has definite characteristics at all ages and the X-ray examination of the chest is just as valuable in the child as in the adult as regards the recognition of early tuberculosis.

FRIDAY AFTERNOON SESSION

1. Encephalitis in Children—Dr. Thomas B. Cooley, Detroit.

This paper will discuss the increasing frequency of encephalitis in recent years, both the toxic and the infectious types. The difference of symtomatology in early life—epidemic and hemorrhagic encephalitis—encaphalitic symptoms accompanying or following certain infections: pyelitis, measles, pertussis and influenza—lead encaphalitis—the difficulties of differential diagnosis—the gravity of the sequelae, paralyses, mental retardation or imbecility, character changes and epileptiform states—the prognosis and treatment.

2. Mongolian Idiocy—Dr. Thomas D. Gordon, Grand Rapids.

The comparison of the theories of etiology—"Exhaustion Products"—endrocrine theory—Crookshank's anthropological or reversion theory. The most characteristic physical signs and mental traits in recent cases seen in practice. The difficulties encountered in

securing admission to suitable schools. The advantages of commitment to an institution. The factors influencing prognosis as to life and as to future mental development.

3. Allergic Diseases in Children—Dr. Samuel J. Levin, Detroit.

   The most frequent conditions found are eczema, asthma urticaria and hay fever. The importance of the more obscure conditions such as vague abdominal pains epilepsy and headache in relation to allergy are stressed. By means of the skin tests the diagnosis of the etiological factors can often be shown and specific treatment frequently instituted. In those cases in which the etiological factor cannot be shown, non-specific foreign protein therapy has been of value.

4. Title to be announced—Dr. John P. Parsons, Ann Arbor.

5. Serum Reactions: The Sensitizing Effect of Previous Antitoxin and Toxin-antitoxin Administration — Dr. John E. Gordon.

   Persons who previously have received toxin antitoxin mixtures react more frequently to serum injections in the treatment of diphtheria, scarlet fever and erysipelas than do control persons. The sensitizing effect of previous serum injections is definite but less marked than toxin antitoxin. The severity of serum reactions is largely governed by the degree of sensitization.

MEDICINE

Chairman, A. Jennings, Detroit.
Secretary, W. R. Vis, Grand Rapids.

Dr. Carl D. Camp, Professor of Neurology, University of Michigan—"Disturbance of Function Related to Emotional Conflicts."

Dr. George L. Waldbott, Detroit—"The Present Status of the Treatment of Asthma."

Dr. John L. Chester, Detroit, "Electro-cardiograms and their Clinical Significance."

Dr. Fred P. Currier, and Dr. Wm. R. Torgerson—"The Present Status of Gall-Bladder Diagnosis and Surgery."

Dr. L. H. Newburgh, Professor of Medicine, University of Michigan—"Obesity."

Dr. Cecil Corley, Jackson, "Multiple Neuritis due to Chronic Focal Infection."

Dr. C. C. Sturgis, Professor of Medicine, University of Michigan—Subject to be announced later.

Dr. E. N. Nesbitt, Grand Rapids—"Healing Tuberculosis."

Dr. C. L. Hess, Bay City—"On the Use of U-50 and U-100 Insulin in Diabetes."

Dr. A. F. Jennings, Detroit—"Medical Experiences in Hyperthyroidism."

Dr. V. M. Moore, Grand Rapids, "The X-ray in the Diagnosis of Tuberculosis."

Dr. C. J. Marinus, Detroit—"Endocrines."

Dr. A. B. Olsen, Battle Creek Sanitarium—"The Medical Treatment of Surgical Tuberculosis by Heliotherapy."

Dr. Henry J. John, Cleveland Clinic—Subject to be announced later.

Dr. George F. Suker, Professor of Ophthalmology, Chicago—Subject to be announced later.

Dr. Richard M. McKean and Dr. George E. McKean, Detroit—Subject to be announced later.

Dr. C. C. Sturgis, Professor of Medicine, University of Michigan—Subject to be announced later.

Dr. Carl Hedbloom, Professor of Surgery, Illinois Medical College—"Thoracoplasty."

We are unable to state at this time when these papers will be given on our program during the two-day meeting.

Yours sincerely,
WILLIAM R. VIS, M. D.

SURGERY

Chairman, Fred. A. Coller, Ann Arbor.
Secretary, F. J. O'Donnell, Alpena.

September 27th—A. M.

SYMPOSIUM ON THORACIC SURGERY

Dr. Edward O'Brien, Detroit—"Surgical Treatment of Pulmonary Tuberculosis."

Dr. F. Dolley, Los Angeles—"Surgical Treatment of Pulmonary Cavitation."

Dr. Wyman Whittemore, Boston—"Chronic Pulmonary Suppuration."

Dr. Carl A. Hedblom, Chicago—Subject to be announced.

Discussed by Dr. Pritchard, Battle Creek; Dr. John Alexander, Ann Arbor; Dr. A. W. Hudson, Detroit.

September 27th—P. M.

Dr. George Crile, Cleveland—Subject to be announced. Discussed by Dr. C. D. Brooks.

Dr. Arthur W. Allen, Boston—"Treatment of Vascular Lesions of the Extremities."

Rr. E. C. Davidson, Detroit—"Treatment of Burns."

Dr. A. S. Crawford, Detroit—"Diagnosis of Brain Tumors." Discussed by Dr. Cassidy, Detroit.

September 28th—A. M.

SYMPOSIUM ON TREATMENT OF FRACTURES

Dr. Arche Hall, Detroit—"Fractures of the Ankle."

Dr. John Hodgen, Grand Rapids—"Treatment of Common Dislocations."

Dr. Grover C. Pemberthy, Detroit—"Fractures of the Femur."

Dr. Philip D. Wilson, Boston—"Modern Concepts of the Treatment of Fractures."

Discussion by Dr. Manwaring, Flint; Dr. Kidner, Detroit; Dr. Ricker, Cadillac; Dr. Whittaker, Detroit.

September 28th—P. M.

Dr. F. N. G. Starr, Toronto—Subject to be announced.

Dr. R. E. Cumming, Detroit—Subject to be announced.

Dr. Carl Ebernach, Milwaukee—"Treatment of Pyelitis."

Dr. Edward Cathcart, Cleveland—"The Place of Pyelography in Diagnosis."

OPHTHALMOLOGY AND OTO-LARYNGOLOGY

Chairman, J. S. Wendel, Detroit.
Secretary, A. R. McKinney, Saginaw.

Thursday, September 27th

9:00-11:30 A. M.—Chairman's Address.
Two papers on Oto-Laryngol-ocial subjects by section members.
One paper by invited guest.

12:00 M.—Luncheon with round table discussion following.

2:30- 5:00 P. M.—Clinics at Harper Hospital—
Demonstration of cases and operations by the eye, ear, nose and throat Staff—in charge of Dr. G. E. Frothingham.

Friday, September 28th

9:00-11:30 A. M.—Election of Officers.
Two papers on Ophthalmological subjects by section members.
One paper by invited guest on Ophthalmology.

12:00 M.—Luncheon and round table discussions in charge of invited guest.

2:30- 5:00 P. M.—Clinics at Receiving Hospital in charge of Dr. J. Milton Robb.

All members of the section are invited to attend the round table luncheons and to present written questions or subjects for discussion.

GYNECOLOGY AND OBSTETRICS

Chairman, G. Van Amber Brown, Detroit.
Secretary, Harold Henderson, Detroit.

September 25-26th

1. "Shall We Operate on Acute Pus Tubes,"
Dr. Max Brunell, Flint, Mich.
2. "Cancer Problems,"
Dr. Reuben Peterson, Ann Arbor.
3. "Treatment of Placenta Praevia,"
Dr. Jas. M. Pierce, Ann Arbor.
4. "The Use of Lipoidol in Gynecological Diagnosis," Dr. H. C. Gushman, Detroit, Mich.
5. Subject to be announced,
Dr. H. E. Northrop, Highland Park, Mich.
6. "Saving of the Uterine Adnexa via Pyosalpinx," Dr. Robert P. Morris, New York.
7. Gynecological clinic, Harper Hospital,
Dr. George Kamperman.
8. Obstetrical Clinic, Harper Hospital,
Dr. Ward Seeley.
9. Subject to be announced.
Dr. Wm. P. Tew, University of Western Ontario, London.

HOUSE OF DELEGATES

Crystal Ball Room

Wednesday, September 26th

FIRST SESSION

10:30 A. M.

Speaker, Henry R. Carstens, Detroit.
Vice-Speaker, H. J. Pyle, Grand Rapids.
Secretary, F. C. Warnshuis, Grand Rapids.

ORDER OF BUSINESS

1. Call to Order.
2. Report of Credentials Committee.
3. Speaker's Address—H. R. Carstens.
4. President's Address—H. E. Randall.
5. Annual Report of the Council—R. C. Stone.
6. Appointment of Reference Committees.
7. Election of Nominating Committee.
NOTE: No two members shall be from the same Councilor Districts.
Duty of Nominating Committee:
(a) Supervise Ballot for President.
(b) Nominate:
1. Four Vice Presidents.
2. Delegates to A. M. A. and their Alternates to succeed:
C. S. Gorsline.
J. D. Brook.
L. J. Hirschman.
3. Designate place of next Annual Meeting.
8. Reports of Committees:
Medical Education.
Hospital Survey.
Public Health.
Legislation.
Tuberculosis.
Venereal Prophylaxis.
Civic and Industrial Relations.
Nursing Education.
Medical History.
Legislative Commission.
Delegates to the A. M. A.
9. New Business and Resolutions.
10. Recess.

SECOND SESSION

2:30 P. M.

1. Roll Call.
2. Reports of Reference Committee.
3. Unfinished Business.
4. New Business.
5. Recess.

THIRD SESSION

7:30 P. M.

1. Roll Call.
2. Reports of Reference Committee.
3. Report of Nominating Committee.
4. Elections:
(a) Four Vice Presidents.
(b) Place of Annual Meeting.
(c) Councilors to succeed G. L. LeFevre and Richard Burke.
(d) Speaker.
(e) Vice-Speaker.
(f) Delegates and Alternates to A. M. A.
5. Unfinished Business.
6. Adjournment.

DELEGATES TO ANNUAL MEETING

NOTE:—*Delegates* in Capitals, *Alternates* in lower case type. Number opposite County Society indicates paid membership.

Alpena—16
C. M. WILLIAMS
H. J. Burkholder

Northern Michigan Medical Society—Antrim, Charlevoix, Emmet, Cheboygan—11
W. E. CHAPMAN
Don H. Duffie

Barry—10
B. C. SWIFT
A. W. Woodburne

Bay-Arenac-Iosco—59
D. T. SMITH
V. H. Dumond

Berrien—41
W. C. ELLET
R. H. Snowden

Branch—13
W. A. GRIFFITH
R. L. Wade

Calhoun—108
C. S. GORSLINE
GEORGE HAFFORD
W. L. Godfrey
W. F. Martin

Cass—7

Chippewa-Mackinac—15
G. A. CONRAD
F. H. Husband

Clinton—18
VERNON C. ABBOTT
W. B. McWilliams

Delta—21
A. L. LAING
J. K. Parish

Dickinson-Iron—14
C. W. WALKER
W. H. Alexander

Eaton—21
P. H. QUICK
S. A. Stealy

Genesee—119
C. F. MOLL
F. REEDER
W. H. WINCHESTER
M. S. Knapp
J. G. R. Manwaring
W. H. Marshall

Gogebic—21

Grand Traverse-Leelanau—23

Gratiot-Isabella-Clare—31
C. F. DU BOIS
M. J. Budge

Hillsdale—22
C. T. BOWER
G. R. Hanke

Houghton-Baraga-Keweenaw—38
W. T. KING
Geo. L. MacWaldie

Huron—7

Ingham—79
J. EARL McINTYRE
MILTON SHAW
O. H. Bruegel
Fred Huntley

Ionia-Montcalm—37
C. H. PEABODY
J. F. Pinkham

Jackson—62
CORWIN S. CLARKE
C. D. MUNRO
D. F. Kudner
W. L. Finton

Kalamazoo-Van Buren-Allegan—117
R. D. THOMPSON
D. J. SCHOLTEN
F. T. Andrews
L. E. Westcott

Kent—196
A. V. WENGER
G. H. SOUTHWICK
J. D. BROOK
H. J. PYLE
E. W. Schnoor
W. E. Wilson
J. S. Brotherhood
R. H. Spencer

Lapeer—20
H. B. ZEMMER
W. J. Kay

Lenawee—34
H. H. HAMMEL
R. G. B. Marsh

Luce—10
R. E. L. GIBSON
F. P. Bohn

Macomb—31
A. J. WARREN
W. H. Norton

Manistee—10
A. A. McKAY
H. D. Robinson

Marquette-Alger—37
Nels Robinson

Mason—11

Mecosta—14
WM. T. DODGE
Glenn Grieve

Menominee—11
JOHN T. KAYE
Edward Sawbridge

Midland—7
JOSEPH H. SHERK
George S. Orth

Monroe—30
S. J. RUBLEY
M. A. Hunter

Muskegon—60
V. S. LAURIN
F. Garber, Sr.

Newaygo—10
P. DRUMMOND
B. F. Black

Oakland—101
N. B. COLVIN
H. A. SIBLEY
Leon Cobb
Robert Baker

Oceana—8
W. L. GRIFFIN
J. D. Buskirk

O. M. C. O. R. O.—(Otsego-Montmorency-Crawford-Oscoda-Roscommon-Ogemaw—7
C. R. KEYPORT
Frank E. Abbott

Ontonagon—5
C. F. WHITESHIELD
E. J. Evans

Ottawa—29
R. H. NICHOLS
S. L. DeWitt

Saginaw—66
J. T. SAMPLE
J. W. Hutchinson

Sanilac—7
D. MAC NAUGHTON
R. B. Mitchell

Schoolcraft—6
W. E. THOMPSON
G. A. Shaw

Shiawassee—29
C. A. CRANE
None elected

St. Clair—49
R. C. FRASER
W. P. Derck

St. Joseph—15
CHARLES MORRIS
Dale Weir

Tri-County—(Wexford-Kalkaska-Missaukee)—18
W. JOE SMITH
S. C. Moore

Tuscola—24
U. G. SPOHN
R. L. Dixon

Washtenaw—123
THERON S. LANGFORD
JAMES D. BRUCE
Frederick A. Coller
J. A. Wessinger

Wayne—1,294
E. C. BAUMGARTEN
ANDREW P. BIDDLE
JOHN L. CHESTER
JAMES H. DEMPSTER
HARRY F. DIBBLE
H. B. GARNER
L. J. HIRSCHMAN
FRANK A. KELLY
R. E. LOUCKS
J. A. McGARVAH
ROGER V. WALKER
GEORGE J. BAKER
GEORGE VAN AMBER BROWN
A. E. CATHERWOOD
J. C. KENNING
C. F. McCLINTIC
F. M. MEADER
FRANK J. SLADEN
C. D. BROOKS
WM. J. CASSIDY
WM. P. WOODWORTH
WM. S. REVENO
S. W. INSLEY
C. C. BIRKELO
W. N. BRALEY
E. D. SPALDING
R. C. ANDRIES
Wm. Donald
L. T. Henderson
Wm. J. Stapleton
Geo. E. McKean
Harry L. Clark
Douglas Donald
Bruce C. Lockwood
Walter J. Wilson
J. Edwin Watson
Bernard Bernbaum
Henry A. Luce
Geo. E. Frothingham
E. B. Richey
E. D. Rothman
Louis J. Gariepy
J. D. Curtis
Wm. R. McClure
L. J. Morand
B. H. Priborsky
A. O. Brown
Charles A. Wilson
D. S. Brachman
F. D. Royce
H. M. Malejan
F. C. Buesser
F. H. Cole
Jay M. Burgess

WOMAN'S AUXILIARY

The State Woman's Auxiliary will hold its Annual Meeting at 2:00 P. M., Thursday afternoon. Further announcement will be made in the next issue.

Mrs. Guy L. Kiefer, President.
Mrs. J. E. McIntyre, Secretary.

ENTERTAINMENT FOR LADIES

This function will be assumed by the members of the Wayne County Woman's Auxiliary.

EXHIBITS

Scientific—Two rooms have been set aside for scientific exhibits. They will be

under the supervision of Doctors Davis and Evans.

Commercial Exhibits — The following firms will occupy space in the area allotted to Commercial Exhibits:

Cameron Electrical Company.
Medical Protective Company.
Swan-Meyers Company.
Kalak Company.
Laboratory Products.
Hanovia Company.
Maltine Company.
W. B. Saunders Company.
Horlicks Malted Milk.
Ingram Company.
Petrolagar.
Sharp and Smith.
Victor X-Ray Corporation.
J. F. Hartz Company.
C. V. Mosly Company.

ANNUAL MEETING

The preliminary program for our Annual Meeting to be held in Detroit, September 26-28th, is imparted in this issue. Read it. Note its excellent features and plan to attend.

The headquarters for all the sessions will be the Book-Cadillac Hotel. The accommodations are such that all our sessions will be under one roof, thus materially adding to our members' comfort as well as facilitating attendance upon the several section meetings. There are several hotels in immediate proximity to the Book-Cadillac where ample accommodations are available. We urge, however, that you secure hotel reservations.

That is all that will be said in this issue. Final announcements will appear in the September Journal.

The Trend of Medical Practice—The Medical Survey Committee of the California Medical Association has compiled some interesting findings that are enlightening to the troubled mind concerned with the trend of practice and state medicine. The rift lies largely in ourselves by reason of desertions of individuals and small groups as well as those serving corporations and industries.

TREND OF GENERAL MEDICAL PRACTICE

The outstanding trend of medical practice as far as the physicians themselves are concerned, seems to be toward specialization and salaried positions. (An excellent report with statistics on these two subjects by Dr. Weiskolten of Syracuse, New York, will be found on page 1046, Journal American Medical Association of March 31, 1928.) It can also be said that medical practice follows the hospital.

It is clear that the great changes taking place in the business world must, in some measure, be reflected in the practice of medicine. The economic conditions that have brought about chain stores, chain banks, installment buying, must in time have their effect on every line of human endeavor. The great consolidations constantly taking place in the business world are causing a keener competition than ever before. Thousands of employes are being brought under one management, and the *health of these employes* becomes a vital factor in the success of the enterprise. Business men have learned from experience that good health among their employes pays big dividends, so now many department stores and industrial corporations have physicians regularly employed to look after the health of their employes as well as treat them for industrial injuries. This has opened up an entirely new field in industrial medicine and has provided many positions for physicians on either part or full-time salaries. Many of the industrial corporations which have either their own organization or a mutual hospital association among their employes are now considering extending this medical and hospital service in a limited way to the families of their employes.

It is constantly being borne in on those who have to do with the problem, that the *cost of medical and hospital care* is too great for the average wage-earner to meet. This is not the fault of the physician or the hospital, but seems to be caused by economic conditions which, at the present time, are beyond our control. The question of the cost of medical, hospital and nursing care is one that is receiving much study and is certainly deserving of continued consideration by the medical profession.

There are so *many organizations dealing with health matters*, that any consideration of the individual organization would be impossible in a report of this kind. Just to mention a few of these organizations whose work must have more or less influence on the general practitioner we have: federal government, state health boards, county health departments, health centers, city health departments, clinics (free and pay), county hospitals, industrial corporations, lodges, and hospital associations.

All of these and many more are engaged either in the prevention or treatment of disease.

It is apparent that each of the above agencies has its effect on the private practice of medicine, and as the dividing line between prevention and treatment becomes less marked the various public health agencies will have a greater effect on private practice than at the present time.

It is no doubt a question in the minds of some, whether or not the prevention of diphtheria, smallpox, measles, whooping-cough, scarlet fever, etc., belongs to the domain of the various health boards or the private physicians. Many of the *county hospitals* are now taking pay, or part-pay patients, and physicians are donating a tremendous amount of time and skill to these institutions. It will be found that most of the county hospitals that are well equipped and have good accommodations are receiving pay patients, and this practice promises to increase very much in the near future and is one of the problems that should be carefully considered by the profession.

There seems to be another trend in the practice of medicine which is being brought about by the public rather than the physician and that is the tendency or seeming *desire of the public to purchase their medical and hospital care on the installment plan.* There has been an amazing increase of lodge and hospital association practice

in this state, and we believe that this is a question which which merits very careful consideration and study. These hospital associations have caused dissention and bitterness among medical men in some localities. If there is sufficient demand for this kind of service from the public, something along these lines is going to be worked out in response to that demand, and it seems to us that the wise thing for the medical profession to do is to meet the issue squarely and give the question the necessary study to determine what is the best course of action in the interest of the public and physicians.

The *hospital associations* have been on of the factors which show the great influence that industrial medicine has had on private practice. The working man has got into the habit of being cared for when injured in industry, and is now looking for the same thing in case of sickness.

Physicians have become accustomed to the accident fee schedule and can see no reason for not treating the same class of people for sickness according to this fee system provided the fee is paid as surely and promptly as in industrial injury cases.

Any discussion of this question is beyond the scope of this report. We simply present the views of physicians as expressed to the committee.

In conclusion it can be said that the *trend of medical practice is*:

1. Specialization.
2. Salaried positions.
3. Practice in hospitals.
4. Grouping of physicians in same building.
5. Groups of physicians co-operating; that is, men in different lines working together but not in partnership.

Physicians and Health—We are quite in accord with Editor Bulson of Indiana and Dr. Brooks of New York as expressed by Dr. Bulson in the appended Editorial. We add—if our fellow doctors were imbued with a consciousness of honesty and consideration for others and ceased for selfish reasons to abet these social workers, (we do not refer to Health Officers) and Clinic proponents lay business would not dominate medical practice.

In discussing the question of the relation of physicians to public health, Dr. Harlow Brooks, of New York, before the Cattaraugus County Medical Society, of New York, had some very pertinent things to say concerning lay control of medical activities, and the pernicious influence of certain social workers who, if they had their way about it, would turn the country over to State Medicine. Dr. Brooks says:

"I know few rascals in the medical profession. I know few men in it who do not value their professional standards as high as life itself. I know few doctors who do not try to keep abreast of the times. I know few doctors who die rich. I know many doctors who devote their time as employes of business institutions; some of them are men of considerable capabilities but they have been dwarfed and curtailed by business control. Few of them frequent the libraries or medical societies. Eventually they become worth no more than the salary they receive. They are the result of the vaunted 'business control of medicine.' Many of them devote their time as secretaries and agents of organized charities. They are despised by their employers, who would never trust them with their lives; they are useless to the profession, and they eventually become so 'organized' that they might as well be classed merely as lay secretaries.

"What does the physician in family practice resent in the activities of public health? He resents nurses doing the work of a physician, making diagnoses, and dictating treatment that the family physician should carry out. Do you blame him? He resents the underpaid, time-serving employe of the department, who from the wealth of his inexperience, minimizes to school children the work and ridicules the respect of their family doctor. He resents wholesale *septic* vaccination and other evidences of legal but bad practice. He resents snap diagnoses in cases to which he has perhaps given serious, experienced and intelligent study. He resents being directed to give treatments which he knows to be still in the experimental stage. He often has just cause for his complaints, because he knows himself to be the better man. This is all correctible. Nurses are nurses until they have studied medicine and legally qualified themselves as practitioners of medicine. They should not be allowed to do, as an agent of public medicine, work which the law does not permit them to do as private individuals. . . .

"Public medicine cannot be divorced from private medicine except at a loss to both. The most potent and influential teacher of public medicine is the physician in contact with his patient. No public medicine can succeed that has not had the endorsement of the average physician. . . . We of the medical profession believe that a license to practice should be granted only after four or more years of study in an accredited school, superimposed on a preliminary education of no mean extent. That this idea is not held by the public at large is only too visibly shown each year by all manner of cults, often backed by the clergy, well-intentioned philanthropists, financiers and people of all sorts, intelligent and otherwise. . . .

"Let us, through our state and county societies, enlist every doctor in the work of public health. Let us invite the co-operation of every honest lay body, but we must dominate. And we must insist that the professional standards which have made medicine shall still prevail; and that medical science shall control medicine in all its applications. Let us take over the city and county health organizations—too many of them are now taking us over. But we must demand that only the competent shall rule. We must demand that at all times the traditions and ethics of medicine shall be respected."

Preliminary Clinic Announcement—A two-day Clinical Program will be conducted at the Hurley Hospital, Flint, on October 24 and 25. Details of the program will be announced in a later issue. A similar clinic will be conducted in Grand Rapids in October for the benefit of our members in the western part of the state. The three-day Clinic at the University Hospital, Ann Arbor, will be conducted in November. Members are requested to note these dates. These clinics will equal any in the country and are provided for you within the boundary of your own state, thereby en-

tailing a minimum of time and expense to participants.

HOW TO KILL A MEDICAL SOCIETY

Don't come to the meetings. If you do come, come late. If the weather doesn't suit you, don't think of coming. If you do attend a meeting, find fault with the work of the officers and other members. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.

If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting, tell everyone how things ought to be done. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique. Hold back your dues as long as possible, or don't pay them at all. Don't bother about getting new members.—The Aesculapian.

There are doctors among us to whom the above applies, but glory be, they are becoming less in number.

POST-GRADUATE CONFERENCES

The following are the programs that characterized the Post Graduate Conferences of the past month:

POST GRADUATE CONFERENCE—SEVENTH DISTRICT
MICHIGAN HOME AND TRAINING SCHOOL—
LAPEER, MICHIGAN, JUNE 28, 1928
PROGRAM

"Opening Statements"—T. F. Heavenrich, Councilor, Port Huron; H. E. Randall, President, Flint.

"Laboratory Methods for the General Practitioner"—H. E. Cope, M. D., Detroit.

"How the Local Physician Can Aid the Mentally Sub-Normal of His Own Community"—Mrs. Irma Waterbury, Lapeer.

"History Taking"—M. E. Wilson, M. D., Lapeer.

"Feeblemindedness as a Social Problem"—W. J. Kay, M. D., Lapeer.

Luncheon

"How Physicians and State Hospitals Can Be More Helpful to Each Other"—E. A. Christian, M. D., Pontiac.

"Endocrine Disturbances in Childhood"—Raymond Hoobler, M. D., Detroit.

"Food Sensitization in Relation to Mental Ability to Carry On"—John Parsons, M. D., Ann Arbor.

"Relations Between Court and Physicians—How it Can Be Made More Helpful in Detecting and Controlling Feeblemindedness"—Judge George Reed, Detroit.

"Pre-School Child and Diagnosing Mentality of Infants"—Dr. Blanche Weil, Psychologist, Flint.

"Aids in Detecting Mental Sub-Normality"—Miss Wilda Rosebrook, Psychologist, Lapeer.

"How Much Does General Appearance Indicate Mental Levels"—Miss Mary Scoville, Psychologist, Lapeer.

"Clinic—Presenting Different Types with Reference to Relationship of Physical and Mental Developments"—M. O. Blakeslee, M. D., Lapeer.

"Endocrinology"—Wm. G. Downs, Jr., Ann Arbor.

"Schizophrenia"—David R. Clark, M. D., Detroit.

POST GRADUATE CONFERENCE—13TH DISTRICT—
GAYLORD HOSPITAL, GAYLORD, MICHIGAN
JULY 18, 1928

PROGRAM

2:00 P. M.—*"Opening Remarks"*—B. H. VanLeuven, Councilor.

2:30 P. M.—*"The More Common Diseases of the Ear"*—W. B. Newton, M. D., Alpena.

3:00 P. M.—*"Infant Feeding with Demonstrations"*—Don H. Duffie, M. D., Central Lake.

3:30 P. M.—*"Acute Abdominal Lesions"*—F. C. Warnshuis, M. D., Grand Rapids.

4:00 P. M.—*"Obstetrics"*—F. C. Mayne, M. D., Cheboygan.

4:30 P. M.—*"Observations from Clinic of Pauchet, DeMartel, Paris, France (Gastric Surgery)"*—B. H. Van Leuven, M. D., Petoskey.

6:00 P. M.—*Dinner*—Masonic Temple.

EVENING SESSION—8:00 P. M.

PUBLIC MEETING—CITY AUDITORIUM

"The Water Supply in Northern Michigan Resorts"—Colonel E. D. Rich, Director of the Bureau of Engineering, Lansing.

"Value of a Personal Health Audit"—F. C. Warnshuis, M. D., State Medical Society, Grand Rapids.

SAINT CLAIR COUNTY

Regular meeting held at the Saint Clair Inn, Saint Clair, Michigan, Thursday, May 24, 1928. After a social hour and very fine dinner the meeting was called to order by President Smith, who requested Dr. J. H. Burley to act as Secretary. The following members and guests were present: Doctors Smith, McColl, Ryerson, Carney, Sites, MacPherson, Thomas, Grice, Cooper, Vroman, Morris, Callery, Webster, Windham, Lane, Waltz, DeGurse, B. E. Brush, Heavenrich, Bowden, Burley and Meredith, as guests Dr. L. R. Gaddis of Port Huron, Dr. Clark McColl of Detroit, Dr. M. J. McColl of Croswell and Mr. Percy Angove, supervisor, Vocational Rehabilitation, Department of Public Instruction.

Mr. Percy Angove addressed the Society and assembled Guests on Vocational Rehabilitation. Mr. Angove stated that three thousand subjects had been returned to work since the work had its inception. About twelve hundred cases are handled each year at a cost per case of ninety-five dollars. Funds for the work are provided by both State and Federal appropriations and $72,000.00 is made available annually for this work. The State pays local Boards of Education two hundred dollars each year for each crippled child educated and at the age of sixteen the child is turned back to the State Vocational Department. During the past year the Board of Education of

Port Huron received three thousand dollars for education of the handicapped child.

Dr. A. L. Callery invited the members of the Profession to attend the Crippled Childrens' Clinic to be held at the port Huron Armory on May 25, 1928.

Dr. Clark McColl then addressed the Society upon "Hyperthyroidism." The speaker presented the subject in a very fine manner and all present were benefited. The matter was discussed by Doctors B. E. Brush, I. Bowden, T. Heavenrich, E. Sites, C. Thomas and others, after which Dr. Clark McColl closed his paper in the usual manner.

Dr. C. F. Thomas talked briefly upon the subject of the proposed new hospital or hospital unit for Port Huron and Dr. Heavenrich moved, supported by Dr. T. H. Cooper, that physicians each make an individual subscription to hospital fund in the event that a subscription was made. Carried.

Dr. F. V. Carney of Saint Clair invited the physicians of the County to utilize the new Saint Clair Hospital at any time it became necessary.

J. H. Burley, M. D., Secretary Pro Tempore.

Regular meeting held at the Saint Clair Inn, Saint Clair, Michigan, Thursday, June 21, 1928. After a social hour and splendid dinner the meeting was called to order by President Smith with the following members and guests present: Doctors Smith, Heavenrich, Thomas, Lane, Sites, McKenzie, Carney, B. E. Brush, McColl, Grice, Cooper, Burley, Bowden, DeGurse, Patterson, Derck, Clancy, Fraser and Caster, as guests, Dr. Wyman Barrett of Detroit and Dr. Don M. Campbell of Detroit also Dr. R. T. Getty, of Port Huron. President Smith requested Dr. Isaac Bowden to act as Secretary. Dr. Heavenrich asked how many would attend the District Conference at Lapeer, June 28, 1928 and eleven members promised to attend. The matter of holding monthly meetings during the summer was brought before the Society by President Smith and was decided in the affirmative and the next meeting was announced for July 19, 1928.

Dr. Wyman Barrett then addressed the Society on "Operative Treatment of Hyperthyroidism." The speaker presented the subject in a fine manner and the talk was very interesting to all present.

Dr. Barretts' paper was discussed by Doctors B. E. Brush, McKenzie, Burley, Bowden, Caster, Lane, Sites, Fraser, Cooper, McColl, Thomas and others after which Dr. Barrett closed in the usual manner.

Dr. Don M. Campbell addressed the Society upon, "Industrial Surgery of the Eye" and a copy of his paper is herewith enclosed. Dr. Campbell's paper was discussed by Doctors Fraser, Cooper, McKenbzie, DeGurse, Lane, Carney, Burley and Smith, the latter thanking the speaker for his talk. Dr. Campbell then closed the discussion in the usual manner.

I. Bowden, M. D., Secretary Pro Tempore.

OAKLAND COUNTY

(Pontiac Press, June 23, 1928)

The story of the development of chemistry and the manufacture of synthetic drugs was told to members of the Oakland County Medical society at its regular meeting at the Board of Commerce Thursday evening. The speaker was Prof. F. F. Blicke, of the College of Pharmacy at the University of Michigan.

Prior to 1550, according to Professor Blicke, the earth was searched by investigators of various sorts who sought the "philosopher's stone" by means of which the baser metals might be turned into gold. With the coming of Paracelsus, who was born in 1493, however, the search changed, as he taught that the object of chemistry "is not to make gold but to prepare medicines."

This period of medical chemistry soon came to an end, according to Professor Blicke, when chemists turned their interest from medicines to phlogiston, oxygen and to ideas regarding the nature of elements and compounds.

However, with the introduction of the first synthetic drug a few decades ago, a second period of medical chemistry was opened, and again one of the chief objects of chemistry is to prepare medicine. This period has been responsible, the professor stated, for some of the greatest advances made in medicine.

Many synthetic compounds are identical in every respect with the natural products, he asserted, and predicted that eventually all drugs may belong to the synthetic group.

"For progress," Professor Blicke asserted, "there must be close contact between the synthetic chemist, the pharmacologist, the clinician and the practising physician," a condition which he says does not exist in this country.

"We are dependent to a great degree upon the biochemist since in the end various changes produced by drugs in the body are changes within the cells and until our information regarding the chemical processes which take place within these primary units is greatly augmented the search for new medicinals must be conducted in a more or less empirical manner.

"It was due to this lack of contact between workers that either was not recognized as a valuable compound for anethesia until four centuries after its discovery. Ethylene gas has been known for 100 years yet its use as an anesthetic was discovered only a few years ago.

"The carnation growers of Wisconsin had suffered losses repeatedly when their flowers were shipped into Chicago and kept in green houses. Two plant physiologists of the University of Chicago were consulted and they suspected illuminating gas from a defective gas main was responsible for the damage. Accordingly they found that a concentration of one part of ethylene in 2,000,000 parts of air caused carnations to close after 12 hours exposure. Then the effect of the gas on animals was determined and ethylene was found in 1923 to be a practical general anesthetic and within three years after its discoverey it was estimated that in this country alone it was used in 50,000 operations."

C. A. Neafie, M. D., Secretary.

BERRIEN COUNTY

The Berrien County Society met in Niles at the Four Flags Hotel on June 28.

Following the dinner at 6:30 a brief business meeting was held in which it was decided to not have any meetings in July or August but to resume the monthly meetings in September.

This meeting was well attended. There were 32 at the dinner and several others came in afterwards for the papers.

The first paper of the evening was a brief, but skilful summary of arthritis. This was delivered by Dr. Harold Robinson, of the Grand Rapids Clinic.

The discussion of this paper was led by Dr. E. J. Witt, of St. Joseph, Dr. Witt's large experi-

ence with arthritis by his supervision of the mineral baths at the Hotel Whitcomb, made the discussion particularly worth while. An open discussion then took place by the other members which was of interest to all. Dr. Robinson then closed the discussion in a very able manner, going into details on particular questions of therapy, in reply to the discussants.

Dr. Alexander Campbell then gave an extremely interesting paper on gynecological problems in general practice. Dr. Campbell as an outstanding obstetrician and gynecologist gives a talk that for its appeal to general practitioners is hard to beat. His method of delivery and personality, combined with a knowledge of the conditions which face the average practitioner, makes his papers well worth the while of those fortunate enough to hear him.

His talk was accompanied by well prepared slides of pathology involved.

This paper was discussed by Dr. George Green of Dowagiac in a very able manner. Dr. Green's reputation as a surgeon in Cass County is well founded, as his discussion of Dr. Campbell's paper showed a wealth of experience.

The general discussion brought out other points of interest, and the completeness of Dr. Campbell's closing reply left his hearers with the impression that this was one of the most worth while talks one could desire.

The Berrien County Society wish to express their appreciation to these men for their trouble, and thank them for their aid in carrying out this Society's post-graduate lecture program.

W. C. Ellet, M. D. Secretary.

WOMAN'S AUXILIARY, MICH. STATE MEDICAL SOCIETY

MRS. GUY L. KIEFER, *President*
Lansing, Mich.

MRS. J. EARL McINTYRE, *Secretary*
Lansing, Mich.

NATIONAL MEETING

The entertainment provided for women visitors to the A. M. A. convention held in Minneapolis in June was carried through without any apparent effort by the Woman's Auxiliary of the Hennepin County Medical Association, and every delegate and visitor left with a feeling of gratitude and kindness toward our hostesses. Nothing was left undone to add to our pleasure and this in spite of the fact that about one-third more lady visitors arrived than had been planned for.

June 11th was given over to registration in the morning. In the afternoon a reception and tea was held at the beautiful Art Institute, with Hennepin County Womans' Auxiliary acting as hostesses. At this time the retiring president, Mrs. John O. McReynolds received the guests also. She is a very gracious and charming person and the National Auxiliary is to be congratulated on having chosen her to fill the first office.

In the evening a dinner was tendered the wives of state officers of the Medical Societies and wives of the House of Delegates of the State and Medical Association. This was given at the Necollet Hotel by the State Auxiliary Association.

Tuesday morning was given to a nine o'clock session of the Executive Board of Woman's Auxiliary with Mrs. McReynolds and Mrs. Long presiding.

At this meeting we had the pleasure of hearing from all past presidents, as well as the president-elect, Mrs. Allen H. Bunce.

The nominating committee was named at this time and requested to make a report at the National Auxiliary meeting on Wednesday, June 13.

Reports of national officers were given at this meeting, with a very forceful talk by Mrs. Hoxie on the necessity of urging "Hygiene" to be used in schools and in fact everywhere we could find a place for it. The national association is standing back of this publication and doing everything possible to urge its use. So far the Woman's Auxiliary of Michigan has done nothing to place Hygeia before the schools, clubs, etc. This we will take up at our annual meeting.

The Presidents breakfast was held at twelve o'clock at the Woman's Club, honoring past presidents, Mrs. C. T. Red, Mrs. F. P. Geogenbach and Mrs. Seale Harris, and the president-elect, Mrs. Allen H. Bunce, Mrs. McReynolds was hostess on this occasion, and she entertained forty guests. This was a very delightful and informal affair and the guests were very happy to accept Mrs. McReynolds' hospitality. After luncheon we were entertained by two artists of state auxiliaries, Mrs. Chappell and Mrs. Cregor.

By this time cars were waiting to take the guests for a drive around St. Paul and tea at the University Club, with Ramsey County Auxiliary as hostesses. The regular afternoon session was postponed until Wednesday.

The annual national auxiliary meeting was held at the Automobile Club and was called to order by Mrs. McReynolds at 10:30 a. m. on Wednesday, June 13.

A welcome to Minnesota was extended by Mrs. Ben Davis, president of Minnesota State Auxiliary, and a welcome to the Twin Cities by Mrs. Sweetzer, president Hennepin County Auxiliary and Mrs. Schultz, president Rumsey County Auxiliary. Responses were made by Mrs. G. Henry Mundt and Mrs. A. Haines Lippincott.

After this routine business was taken care of and some very interesting papers read, as follows:

1. Following Hygeia to rural schools, given by Mrs. A. B. McGlothan.
2. An experiment in Health Education in rural schools by the Jackson County (Missouri) Auxiliary, Mrs. A. L. Skoog.
3. Plans for State Health Work, Mrs. H. B. Trigg.

The meeting was then adjourned for luncheon at which time we had as our official visitors Dr. Jabez Jackson, President A. M. A.

Dr. W. S. Thayer, President-elect; Dr. Morris Fishbein, Editor Hygeia and Journal to A. M. A.

The afternoon session was called to order with Mrs. David W. Parker presiding.

We had a very pleasant surprise in the presence of Dr. Lulu Hunt Peters, who entertained us with a talk on calories. She was a very delightful speaker.

Dr. Martha Welpton of San Diego, California

gave us "A Word from the West." She made a very favorable impression on her audience.

A very snappy talk on "our official duties was given by the President of the Missouri Auxiliary, Mrs. Willard Bartlett.

"Medical Legislation" was presented by Mrs. F. W. Cregor, President of the Indiana Auxiliary.

"Fact Finding in State Medical History," by Mrs. A. T. McCormack, President Southern Medical Association was the last paper given for the afternoon.

The presentation of officers was then in order and Mrs. McReynolds retired in favor of the new President who gave a forceful short talk on "Our Outlook."

The meeting was then adjourned until Thursday afternoon.

Thursday morning was given over to a beautiful drive to the Country Clubs of Lake Minnetonka with luncheon at the Lafayette club.

The State Presidents' reports were given at the afternoon session, and it was a great pleasure to the writer to note that Michigan's president, Mrs. Guy L. Kiefer was one of the favorite speakers of the afternoon. Her report and the few extemporaneous remarks were received with a great deal of applause.

The nominating committee reported the name of Mrs. George H. Hoxie of Missouri as our new President-elect.

The meeting was then adjourned.

Friday, June 15 was given over to shopping for lady guests and a trip to Glen Lake Sanitarium.

The Executive Board, comprised of State Presidents, held a long session with the president, Mrs. Allen H. Burce, outlining its plans for the years activities.

And this finished the annual convention of the Woman's Auxiliary to the American Medical Association.

The meetings were all well attended and much interest was displayed.

One thing the Michigan delegates decided was that business meetings should be given over strictly to that with no social entertainment to be mingled with it—when the two are combined nothing was accomplished.

We are therefore anxious to have one day at our annual meeting in Detroit given over to annual election of officers, state reports, President's address, luncheon to be served during this session and one very interesting and entertaining speaker on the needs and uses of state auxiliaries. After that one day, which we hope may be decided on shortly, we hope the visitors will have no business but only pleasure to attend to .

Mrs. J. E. McIntyre, Secretary.

WOMAN'S AUXILIARY DEPARTMENT ANNUAL REPORT FOR MICHIGAN AS GIVEN AT THE CONVENTION OF THE WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION IN JUNE, 1928

The Woman's Auxiliary to the Michigan State Medical Society was organized at Mackinac Island in June, 1927, with approximately twenty-five in attendance.

Mrs. Guy L. Kiefer of Detroit was unanimously chosen President and given the power to choose her officers for the year.

During 1927-28 we have organized fifteen Auxiliaries with 300 members, and have about five more counties in the process of organizing.

Child Health programs were arranged by our State Health Board and sent to all county auxiliaries by the Secretary.

Our State Medical Society has given us substantial support throughout the year, in fact have been our mainstay, and we feel extremely grateful to the President and Secretary.

The annual state meeting will be held in Detroit in September 1928, at which time we hope to submit a program to be worked out during the coming year.

Mrs. Guy L. Kiefer, President.

MEDICAL SOCIETY IS ENTERTAINED BY AUXILIARY

A dinner dance which was one of the most delightful of the affairs which has been given at the Country club this season was sponsored by the Women's Auxiliary to the Bay County Medical society Wednesday evening.

Fifty were seated at the long tables for dinner, and floor space was left for dancing between courses. Great baskets of lilacs stood everywhere a nook could be found for them, and bowls of marigolds and sweet peas interspersed with ivory candles made the tables attractive.

Mrs. M. R. Slattery was the chairman of the affair, and it was one of the most successful parties ever sponsored by the auxiliary.

Sent in by Mrs. A. W. Herrick, President.

Hastings, Michigan, May 5, 1928.

Dear Mrs. McIntyre:

Your communication to Mrs. Kellar was handed to me a few days ago, and will try to answer your requests.

We are not a large Auxiliary, just ten members, but I believe, the first one organized.

In the first place for many years we have attended the monthly meetings of our Men's County Medical Society as their dinner guests usually going to some one's home or to some place of entertainment while the men held their meeting, so you see it was not hard to organize as we usually met once a month.

Perhaps we have not been very active, but last year we had a debate on birth control, current topics on the new things in Medical lines, sent flowers to sick members, etc., and generally finished the evening with bridge. Yes, I must not forget one evening we discussed "Would We Marry a Physician Again?" bringing out much merriment, also a poem from one of our members, but we have not yet developed any real serious plans for the coming year.

I wish to thank you for blanks on public activities in other counties.

Some of these have already been carried out in the County, but we should be able to find work to do from these programs of others.

Our officers for present year are:

President, Mrs. Guy C. Kellar, Hastings, Mich.
Treasurer, Mrs. Birge Swift, Middleville, Mich.
Secretary, Mrs. C. S. McIntyre, Hastings, Mich.

My Dear Mrs. McIntyre:

The most our Auxiliary has done this year is to become better acquainted with each other. We have only three regular meetings a year and tonight we have our last gathering. Besides our regular meetings we have had monthly pot-luck dinners, at the different homes, with a social evening following and it's surprising how many doctors' wives I didn't know.

The list of officers is as follows:

President, Mrs. F. T. Andrews, Kalamazoo.

First Vice President, Mrs. C. B. Fulkerson, Kalamazoo.

Secretary-Treasurer, R. J. Hubbell, Kalamazoo.

Second Vice President, Mrs. N. L. Goodrich, South Haven.

Third Vice President, Mrs. W. R. Vaughn, Plainwell.

Secretary-Treasurer, Mrs. R. J. Hubbell, Kalamazoo.

Sincerely, Mrs. R. J. Hubbell.

Ingham County Auxiliary has come to the front and shown its willingness to serve by promising aid to the Visiting Nurse Association. Funds are low and help is needed. Ingham held a sale for one day, homespuns, baskets, Near East Relief articles, and cleared in the neighborhood of eighty dollars. This is to be turned over to the Visiting Nurse Association to help out current expenses for the year.

THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

THE BRAIN FROM APE TO MAN*

The brain has long been a subject of interest and of wonder to man. With the application of scientific method to its study, nerve tissue has become increasingly more interesting. Its cells are most highly specialized and the most long lived in the body. They have an important bearing on the integration of an organism. The nervous system shows more clearly than any other part of body structure, the varied influence of heredity and environment. For this reason it has been particularly difficult to treat the brain from the standpoint of comparative morphology.

However, in the primate groups of animals the phylogenetic trend involves increased complex brain development. Professor Tilney has made intimate examination of the brain development of the primates including man. He has developed a technique whereby brain tracts and brain nuclei may be quantitatively compared.

In treating of the brains of apes Dr. Tilney has for convenience considered three non-human groups which he refers to as the lower, intermediate and higher apes. In the lower group he considers the lemur, Tarsius, the marmoset and the spider monkey. The intermediate group consists of the baboon, the macaccus and the gibbon. The three higher apes, the orang-outang, the chimpanzee, and the gorilla, form the third group. This grouping, although not phylogenetic seems to be indicated by the brain development. The anatomy of the brain stem of each of these is considered in some detail, representative cross sections serving at illustrations.

The method of treatment may be exemplified by the comparison of the extreme brain types considered in the work, namely that of the lemur and that of man. The lemur is a very active animal, entirely arboreal in its habits, spending its whole life in the tree tops, through which it can progress with the speed of a bird. The animal is somewhat catlike in general appearance, the fore and hind limbs being highly specialized for life in trees. In this animal most of the activities are of a reflex character in contrast with those of the human, which are deliberative. When startled by a loud sound, for instance, the animal immediately flees, rather than first ascertain the source of the sound and then determin its reaction according to the nature of the disturbing stimulus.

In contrast to that of the human, the brain of the lemur presents notable peculiarities. The nucleus fastigii of the cerebellum and the vestibular nuclei are large, indicating a much more complex balancing mechanism. The fasciculus gracilis is larger and the fasciculus coneatus is smaller than in the human. This means that the posterior extremities are more highly specialized than the anterior. The pons and pyramids are much smaller than in the human, signifying a small motor control by the higher brain centers. There is, in other words, a more limited range of skilled performance. The inferior colliculi are very large, indicating that the reaction to hearing is not deliberative. Sounds give rises to reflexes which are not strongly conditioned. The superior colliculi are highly developed, which bespeaks little visual telencephalization. The oculomotor nuclei show few internuclear fibers and the nuclei themselves are lowly developed, denoting that vision is only partly binocular.

Comparisons are similarly made between the brain structures in the various monkeys, lemurs, apes and man. We are able to trace rather definite morphological trends in brain development from the lower to the higher apes. The pyramids correlated with increased volitional control become greater developed. There is an increase in the development of the olivary nucleus with which we associate increased coordination of the head and neck. There is a falling off of the relative importance of the sensory conduction system from the hinder part of the body in favor of the fore limbs. In other words, with the increased specialization of the hand throughout the Primates the sensory control becomes correspondingly greater. The vestibular nuclei decrease throughout the series except in certain cases of the higher brachiating monkeys in which high development may be explained by adaptive radiation. The dentate nucleus and the red nucleus increase in size and differentiation. The superior colliculi decrease in complexity due to the reference of auditory stimuli from this region to the cortex. The decussation between the nuclei of the third nerve becomes more pronounced as we approach the higher apes. This is correlated with increased binocular vision. Most significant, perhaps, is the increase of the pontine elements, the high development of which is associated with increased body control. In general we may say that the trend of brain development in the primates is toward an increase in discriminative sensibility.

The author then goes on with a discussion of

* The Brain from Ape to Man. A contribution to the Study of the Evolution and Development of the Human Brain, by Frederick Tilney; with Chapters on the Reconstruction of the Gray Matter in the Primate Brain Stem by Henry Alsop Riley; Foreword by Henry Fairfield Osborn; 1120 Pages; 558 Illustrations, Many in Color; Two Volumes. Paul B. Hoeber, New York, 1928.

the brain development in the various extinct types of man comparing the brain with that of the apes and with modern man. The skulls of fossil men from Pithecanthropus to the Cro-magnon are submitted to treatment. Casts of the skull cavities of these indicate rather closely the degree of convolutional complexity and the size of the brain parts. By comparison of these with those of modern man, it is possible to get some knowledge of the mentality of our human predecessors. We may account through this method of research for the development of speech, the expansion of the visual and auditory cortex, the inception of right-handedness, and the establishment of human personality. On the basis of structure, the author concludes that the brain of man has not in its development reached a cul-de-sac but that there is considerable possibility of increased evolutionary development in man from the mental standpoint.

Professor Tilney's book is the result of years of neurological study and a surprisingly large part of the work is absolutely original. It is well reasoned and though the attitude is quite conservative, many far reaching conclusions are drawn. The method of writing the anatomical parts is particularly of interest. Whenever a nerve tract or a nucleus is mentioned it is connected functionally with the remainder of the brain stem so that the descriptions are vivid and dynamic rather than prosaic as such descriptions so frequently are. It would, however, have been preferable if a consistant BNA nomenclature had been adopted rather than a mixture of this with the older terminology.

The book is well illustrated with pertinent photographs and with colored illustrations. It is completely indexed and has pages of reference for further reading. The only criticism that can be made regarding the make-up of the book is that it is somewhat bulky.

—W. T. DEMPSTER.

STORY OF ELECTRICITY, INCLUDING A CHRONOLOGY OF ELECTRICITY AND ELECTROTHERAPEUTICS—By Herman Goodman, M. D. With an introduction by Victor Robinson, M. D. Illustrated with 12 full-page portraits. Published by Medical Life Press, 12 Mt. Morris Park West, New York, N. Y.

The story of electricity resembles that of medicine in as much as it is the life history of personalities along with their achievements. While this book would seem to concern the physicist in his various activities, it also appeals to the physician. Electricity has come to play a very important part in therapy and indirectly in diagnosis. Besides interesting biographical sketches of those who have been most instrumental in developing the science, there is a chronological table of electricity and electrotherapeutics going back to 600 B. C.

THE COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION FOR 1927, VOLUME XIX—Edited by Mrs. M. H. Mellish and H. Burton Logie, M. D. Octave volume of 1330 pages with 412 illustrations. W. B. Saunders Company, Philadelphia and London, 1928.

To this volume it is quite impossible to do justice in a brief review. It is a mine of up-to-date information of the best in medicine and surgery. The list of contributors is like a medical "Who's Who". Dr. William Mayo has three articles, "The Relation of the Basic Medical Science to Surgery," "The Relative Value of the Special Senses to the Surgeon," and "The Fourth Epoch of Medicine." Dr. Charles Mayo has an interesting article entitled, "The Value of Broadmindedness". "Graduate Medical Education in Europe" by Louis Burlson will be of great help to the physician who is going to Europe for study. "New Developments in the Treatment of Peptic Ulcer" by Andrew B. Rivers is a masterly presentation of this common disease. The surgeon will be interested in the many phases of work from this storehouse of surgery. The "Technic of Partial Gastrectomy for Cancer in the Stomach" by Donald C. Balfour. "The Results of Operations for Duodenal Ulcer in Physicians" by the same author giving the results of operations on 100 physicians is food for thought.—W. J. S.

A TEXT-BOOK OF BIOLOGIC ASSAYS—By Paul S. Pittenger, 373 pp, 153 illust. P. Blakiston's Son & Co., 1928.

This little book is a revision of the author's *Manual of Biochemic Drug Assay Methods*, 1914. It deals with the action and standardization of those drugs which do not readily submit to chemical analysis. There are chapters dealing with suprarenal gland products, ergot, the pituitary body, cannabis, piscidia, ephedra, vitamines, local anesthesia, and myotics and mydriatics. The book is essentially a textbook and laboratory handbook, considerable space being given to descriptions of apparatus and technique. Official and unofficial standards are recorded.

CLINICAL MEDICINE—By Oscar W. Bethea, M. D., Ph. G., Professor of Therapeutics, Tulane Graduate School of Medicine; Professor of Clinical Therapeutics, Tulane School of Medicine, New Orleans, La. Octave volume of 700 pages. W. B. Saunders Company, Philadelphia and London, 1928.

This is a book on what is commonly known as Practice. The author is a teacher of both clinical medicine and therapeutics. His effort as stated by himself, has been to put into a volume of moderate size the latest and most generally accepted information as to diagnosis and treatment of about one hundred of the most common diseases coming within the province of internal medicine. The work concerns itself with information that is in general agreement among internists. The discussion of controverted theories has been left to the larger works of which the field of medicine is well supplied. Many will welcome the attention paid to therapeutics in which the work rivals and in fact surpasses many of the larger works in practice. Prescriptions are written in both the apothacaries and the metric system. The book will be found of real value not only to the undergraduate but to physician as well who would supplement his library by a work that deals in a clear cut way with essentials.

ADDRESSES ON SURGICAL SUBJECTS—By Sir Berkeley Moynihan, Bart., President of the Royal College of Surgeons of England. Octavo of 348 pages, illustrated. W. B. Saunders Company, Philadelphia and London, 1928.

This boook consists of essays and addresses which first appeared in several British Medical Journals, also in Surgery, Gynecology and Obstetrics. The opening chapter deals with the subject of "Hunter's Ideals and Lister's Practice." Among other subjects treated are "The Debt of Pure Science to Medicine," "The Relationship of Radiology and Surgery," "Cancer and How to Fight It," "Lister as a Surgeon, as a Benefactor of Mankind," "The Gallbladder and its Infection." The essays or addresses are written in that charming diction of which the British savant is so capable. The appeal is much broader than surgery; it is not only medical but the volume will enlist the interest of the cultured layman as well.

PRINCIPLES AND PRACTICE OF OBSTETRICS—Joseph B. DeLee, A. M., M. D. Professor of Obstetrics, Northwestern University Medical School. Fifth Edition, Thoroughly Revised. Large octavo of 1140 pages, with 1128 illustrations, 201 i ncolors. W. B. Saunders Company, Philadelphia and London, 1928. Cloth, $12.00 net.

The appearance of a new edition of this well known work is an item of much interest to obstetricians and indeed to all physicians who conduct obstetrical cases. There are no radical changes from the fourth edition. However, as we might expect, the present edition is larger than any previous one. The increase has been made necessary chiefly by the increased space devoted to practical matter, much of it for the general practitioner. The chapters on the treatment of hyperemesis, eclampsia, abruptio placentae, and placenta praevia have been largely rewritten. Many new illustrations appear. The chapter on forceps has been enlarged and new illustrations have been added. The author describes the procedure of temporarily explanting the infected uterus in doing Caesarean section. This operation which was first done by Gottschalk has been reviewed by Portes and promises to have considerable usefulness.

Special mention should be made of the chapter on forceps. It is thirty-six pages in length and profusely illustrated. Forceps delivery is a subject of supreme importance and this is an excellent discussion. The Kielland forceps which is now being highly praised and widely used in Europe is discussed; the author concedes its usefulness, but seems to feel that an unnecessary furore is being raised about it.

The low cervical section which DeLee has always championed is described at greater length than in the last edition. The distinguished author has done much good in emphasizing the benefits of this form of section.

DeLee, who has been one of the most progressive of obstetricians and much of an innovator seems to be growing a little more cautious. The alacrity with which untrained operators attempt difficult obstetrical procedures has made obstetrical writers feel that they dare not encourage radical measures. This situation is not conducive to new developments in obstetric practice.

Unlike most obstetrical authors, DeLee does not assume that men are born with an instinctive knowledge of episiotomy repair; he describes and pictures this much neglected bit of work—C. E. D.

THE SURGICAL CLINICS OF NORTH AMERICA—April, 1928, Volume 8, Number 2; New York Number. W. B. Saunders Company, Philadelphia and London.

Among the clinics here presented is that of Dr. John F. Erdmann of the New York Post-Graduate Medical School, on operative procedures in the fibroid uterus. Dr. Howard Lileinthal deals with surgery of tuberculosis of the lungs by two different methods. Dr. John Moorhead's contribution will appeal to the orthopedist and industrial surgeon as it discusses fracture of the head of the radius, arthrotomy of the knee joint, arthritis, plaster block splints, and physiotherapy after injury. There are ten other contributions dealing with practical applications of surgery. The various clinical reports are well illustrated.

A MANUAL OF THE PRACTICE OF MEDICINE—A. A. Stevens, M. D., Professor of Applied Therapeutics in the University of Pennsylvania. Twelfth edition, Revised. 12 mo of 657 pages, illustrated. W .B. Saunders Company, Philadelphia and London, 1928. Cloth, $3.50 net.

This little book first appeared in 1892, since which time it has gone through to the twelfth edition. The past thirty-six years has virtually seen modern medicine come into being. Steven's Manual of Practice with its 600 pages has chronicled the advances that have taken place during this period. Many of the former subjects treated have been re-written and sections dealing with epidemic streptococcus sore throat, chronic ulcerative colitis, Epstein's nephrosis, essential arterial hypertension, sickle-cell anemia, rat-bite fever and tularemia have been added. The busy practitioner will find this work an ideal desk companion. It is well indexed for ready reference.

THE EXAMINATION OF PATIENTS—Second Edition, by Nellis B. Foster, Associate Physician to the New York Hospital; Associate Professor of Medicine at Cornell University College of Medicine. Published by W. B. Saunders Company, Philadelphia. Price $4.50, 392 pages.

The preface, "Why Do Doctors So Often Make Mistakes?" a quotation from the Journal Interne of Henri Frederich Amiel, Schevenunger, Aug. 22, 1873, is good. This book is filled with good material for the every day practice of medicine. The author takes up the theory of diagnosis, the assembling of data and then in order the examination of the various parts of the body. This is followed by special examination and the various tests. He also gives a list of the principal causes of illness in the United States. Thus the student if he will can become more conversant with these in more detail and thus be a better doctor. There are numerous X-ray and other illustrations besides a very complete index.—W. J. S.

GONOCOCCAL URETHRITIS IN THE MALE, FOR PRACTITIONERS—P. S. Pelouze, M .D., Associate in Urology and Assistant Genito-Urinary Surgeon at the University of Pennsylvania. Octavo volume of 357 pages, illustrated. Cloth, $5.00. W. B. Saunders Company, Philadelphia and London, 1928.

The author has presented the case ofgonorrhea in a clear and concise manner. There has been much confusion in the past in regard to this ever present malady. The whole subject has been covered in a manner never before presented. The chapters on treatment will greatly aid the practitioner in planning his campaign for the cure of a disease which is one of the most difficult encountered. Much thought has been given the question from a sociological standpoint. This emtribution to a subject so little understood by the average practitioner is one that will be read and studied to advantage by everyone practicing general medicine.—W. C. M.

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In many cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

AN ANNOUNCEMENT TO THE AMERICAN MEDICAL PROFESSION

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CHOLECYSTOGRAPHY—WHAT IS ITS MEANING?

It would seem appropriate to state briefly the generally accepted diagnostic interpretation of a negative and a positive cholecystogram as judged from a review of the literature. In a patient with a normal liver, normal gallbladder and unobstructed ducts, the dye introduced either intravenously or by mouth reaches the liver, passes out in the bile, enters the gallbladder by way of the cystic duct, is visualized by the roentgen ray, increases its density of shadow and is gradually discharged from the gallbladder, all within reasonably established normal time limits unless the gallbladder emptying is accepted as a result of food products reaching the duodenum, particularly those rich in fat, such as cream, butter and egg yolk. It has been found, too, that variations in the size, shape and positions of the gallbladder, as well as its rate of emptying, bear a definite relation to the general habitus of the patient. The essentials, then, of a negative cholecystogram suggesting normal health of the gallbladder consist of its proper filling, its proper concentration, and its proper rate of emptying of the dye, especially when responding to the influence of the Boyden meal, with evidence of normal contractility and absence of deformity of the gallbladder wall.

The positive cholecystogram interpreted to indicate disease of the gallbladder consists in (1) failure of visualization of the gallbladder suggesting either (*a*) an obstruction of the cystic duct or (*b*) a gallbladder content made up of a solitary calculus or thickened gallbladder mud, so static as not to receive a fresh admixture of dye-stained bile; (2) a partial visualization of the gallbladder with mottled areas suggesting calculi or postive or negative shadows of gallstones, in which instance it may be inferred that the cystic duct is not completed occluded; (3) an imperfect visualization of the gallbladder with failure of the dye to concentrate, suggesting disease of the gallbladder sufficient to impair this function; (4) delayed filling, concentrating or emptying of the gallbladder, or a deformed silhouette suggesting adhesions. A positive cholecystogram, therefore, is inferentially accepted as an indication of gallbladder disease requiring surgical intervention. Here lies a possibility of three errors in diagnosis of considerable importance to the patient. The first, and by far the less common one, is disease of the liver preventing excretion of the dye in sufficient concentration. The second possibility, of more frequent occurrence, may be dysfunction of the duodenum or of the termination of the common duct producing abnormal relaxation of either of them, whereby the dye-laden bile passes out directly into the duodenum and so prevents visualization of the gallbladder. Furthermore, if the oral method is used, disturbed absorptive power of the intestine may in some instances contribute to poor visualization; or, if diarrhea occurs, intestinal hypermotility, interfering with proper absorption, may be a factor. These possibilities we will leave for future consideration. The third and quite common possibility of error concerns obstruction of the cystic duct by catarrh or inflammatory edema, an obstruction which may be either partial or complete. Obviously, any of these conditions may prevent visualization of the gallbladder and account for cases in which a normal gallbladder is found at operation. It is quite true that the intravenous administration of the dye in such cases tends to minimize the frequency of this error of interpretation; nevertheless, it can occur despite this method of use.—Lyon and Swalin in the Journal A. M. A.

TREATMENT OF MONGOLOID IDIOTS

Mongoloid idiots—those baffling cases of defective children that look like flat-faced oriental dolls—may be reclaimed from their smiling, contented state of idiocy and in some cases may even reach practically normal intelligence. This was the encouraging report made today by Dr. Walter Timme, of New York, before the American Association for the Study of the Feebleminded, meeting here.

The cause of Mongolism and how to treat it are still uncertain, though it is generally recognized as a gland disorder. Working on this theory, Dr. Timme stated that he has been feeding Mongoloid patients pituitary substance, both of the whole gland and particularly of the fore lobe of the gland. "As a result of ten years of this work, I have brought many of my Mongoloid patients to much higher levels than we have heretofore been able to do do," he said.

Some of these children who had started in life with the prospect of remaining idiots, unable to dress themselves, talk properly, or even eat like normal children, learned to do arithmetic up to multiplication by three or more figures and long division. They also learned to write letters and do oral arithmetic, which is remarkable achievement for these cases.—Science Service.

FOOD'S UTILIZATION UNAFFECTED BY OIL

Food is digested, absorbed and made available for doing the body's work just as effectively when liquid petrolatum is added to the diet as when inert laxative oil is not taken with the food. To the American Medical Association, Minneapolis, Dr. Alfred B. Olsen of Battle Creek Sanitarium reported experiments on dogs and human beings that settled this moot medical question.—Science Service.